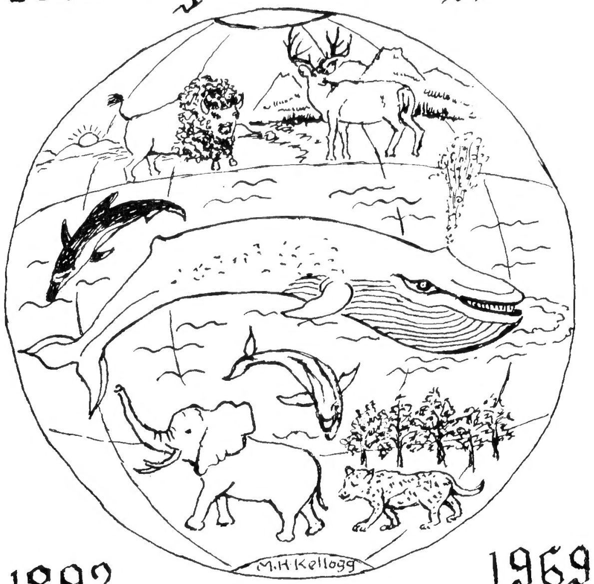
In Memory of
Remington Kellogg



1892 1969

Mammalogist
Paleontologist

ANATOMICAL AND ZOOLOGICAL RESEARCHES:

COMPRISING AN ACCOUNT OF THE

ZOOLOGICAL RESULTS OF THE TWO EXPEDITIONS
TO
WESTERN YUNNAN
IN
1868 AND 1875;

AND

A MONOGRAPH OF THE TWO CETACEAN GENERA, PLATANISTA AND ORCELLA.

BY

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SECOND VOLUME—PLATES.
(84 Plates.)

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ANATOMICAL AND ZOOLOGICAL RESEARCHES,

AND

ZOOLOGICAL RESULTS OF THE YUNNAN EXPEDITIONS.

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CORRIGENDA.

Page 1, lines 3 and 4, *for* " St. Hiliare" *read* " St. Hilaire."
Plate V, *for* " C. HIMALAICUS" *read* " C. HIMALAICA."
„ VII, *for* " H. GRISEUS" *read* " H. PALLIDUS."
„ L, *for* " C. TEPHROCEPHALA" *read* " C. TEPHROCEPHALUS."
„ LIX, *for* " EMYS" *read* " BATAGUR."
„ LX, *for* „ *read* „
„ LXI, *for* „ *read* „
„ LXXVB, *for* „ *read* " MORENIA."
„ LXXVIII, *for* " fig. 6" on plate (not description of figures) *read* " fig. 7," and *for* " fig. 7" *read* " fig. 6."
„ LXXX, *for* " G. FUSIFORMIS," fig. 3, *read* " G. SUBFUSIFORMIS."
„ LXXX, *for* " PALUDINA MARGARIANA," fig. 5, *read* " MARGARYA MELANIOIDES."

DESCRIPTION OF THE PLATES.

PLATE I.

Macacus arctoides, Is. Geoff. St.-Hiliare, male adult, from life.

PLATE II.

Macacus arctoides, Is. Geoff. St.-Hiliare, female young, from life, the *M. brunneus*, Anderson.

PLATE III.

Macacus rhesus, Desm., variety, female, from life.

PLATE IV.

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,, 2. *Vesperugo andersoni*, Dobson; head in profile.
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,, 4. ,, ,, portions of upper and lower jaws showing dentition from in front.
,, 5. ,, ,, skull and mandible in profile.
,, 6. ,, ,, teeth of lower jaw.
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,, 3. ,, ,, palatine surface of skull.
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,, 5. ,, ,, articular extremity of the right mandible enlarged to show its facets *a* and *b*.

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,, 9. ,, ,, sternum and ribs enlarged one-half.
,, 10. ,, ,, bones of fore limb, $\frac{2}{1}$ natural size.
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,, 12. ,, ,, ossa innominata under view.
,, 13. ,, ,, ,, ,, upper surface.
,, 14. ,, ,, side view of os innominatum.
,, 15. ,, ,, bones of hind limb, twice natural size.
,, 16. ,, ,, the tibia and fibula.
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,, 19. ,, ,, under aspect of the same.
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,, 23. ,, ,, lumbar and last four dorsal vertebræ.
,, 24. ,, ,, six of the caudal vertebræ.
,, 25. ,, ,, the sternum.
,, 26. ,, ,, the scapula with clavicle attached.
,, 27. ,, ,, the bones of the fore limb.
,, 28. ,, ,, two lumbar vertebræ, the sacrum and ossa innominata, under-surface, twice natural size.
,, 29. ,, ,, lateral aspect of os innominatum enlarged $\frac{2}{1}$.
,, 30. ,, ,, the bones of the hind limb, twice natural size.

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,, 3. The upper surface of the skull.
,, 4. A side view of the skull and mandible.
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,, 6. The same on the right side and from below.
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,, 8. The entire skeleton in profile.
,, 9. Series of vertebræ from 10 dorsal to 5 lumbar inclusive, $\frac{2}{1}$ natural size.
,, 10. Front view of the atlas.
,, 11. A side view of the axis.
,, 12. Dorsal aspect of the axis.

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,, 14. The right humerus.
,, 15. The radius and ulna.
,, 16. Left os innominatum.
,, 17. The right femur.
,, 18. The right tibia and fibula.
,, 19. The sternum.

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,, 2. ,, ,, ,, from above.
,, 3. ,, *nicobarica*, Zelebor., in profile.
,, 4. ,, *ferruginea*, Raffles, in profile.
,, 5. ,, ,, ,, from above.
,, 6. ,, *belangeri*, Wagner,[1] from above.
,, 7. ,, ,, ,, in profile.
,, 8. ,, *chinensis*, Andr., from above.
,, 9. ,, ,, ,, in profile.
,, 10. ,, *splendidula*, Gray, from above.
,, 11. ,, ,, ,, in profile.
,, 12. ,, *elliotti*, Waterhouse, from above.
,, 13. ,, ,, ,, in profile.
,, 14. ,, *javanica*, Horsfield, in profile.
,, 15. ,, ,, ,, from above.
,, 16. ,, *malaccana*, Andr., in profile.
,, 17. ,, ,, ,, from above.
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,, 19. ,, ,, ,, in profile.
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,, 21. ,, ,, ,, in profile.

PLATE VIII.

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,, 2. ,, ,, ,, lower surface.
,, 3. *H. brachyurus*, Gray, lower surface.
,, 4. ,, ,, ,, upper surface.

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[1] By an error this species appears in the plate as *T. peguana*.

Fig. 5. *H. smithii*, Gray, lower surface.
,, 6. ,, ,, ,, upper surface.
,, 7. *H. jerdoni*, ,, upper surface.
,, 8. ,, ,, ,, lower surface.
,, 9. *H. pallidus*, Wagner, upper surface.
,, 10. ,, ,, ,, lower surface.
,, 11. *H. ferrugineus*, Blanf., natural size, upper surface.
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PLATE IX.

Skulls of species of *Herpestes*, continued. To scale of ¾th natural size—
Fig. 1. *H. semitorquatus*, Gray, upper surface.
,, 2. ,, ,, ,, lower surface.
,, 3. *H. viticollis*, Bennett, upper surface.
,, 4. ,, ,, ,, lower surface.
,, 5. *H. urva*, Hodg., upper surface.
,, 6. ,, ,, ,, lower surface.
,, 7. *H. maccarthiæ*, Gray, upper surface.
,, 8. ,, ,, ,, lower surface.
,, 9. *H. persicus*, ,, upper surface.
,, 10. ,, ,, ,, lower surface.
,, 11. *H. auropunctatus*, Hodg., upper surface.
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PLATE X.

Lutra sumatrana, Gray. About ¼th natural size.

PLATE XI.

Different views of the skull of the type ♂ of *Lutra nair*, Fred. Cuvier. Drawn from the specimen in the Museum, Jardin des Plants, Paris, and each figure of natural size—
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,, 2. Its upper surface.
,, 3. Palatal view of skull.
,, 4. Occipital region.

PLATE XII.

Crania of two species of Otter, of natural size—
Fig. 1. *Lutra monticola*, Hodgson? side view.

Fig. 2. *Lutra monticola,* Hodgson ? palatal surface.
,, 3. ,, ,, ,, upper surface.
,, 4. *Lutra sumatrana,* Gray, upper surface.
,, 5. ,, ,, ,, palatal surface.
,, 6. ,, ,, ,, side view.

L. sumatrana, Gray, is imperfect, being extracted from a preserved skin, but the characters in dentition, &c., are retained.

PLATE XIII.

Rhizomys pruinosus, Blyth. $\frac{3}{4}$th natural size.

PLATE XIII A.

Rhizomys erythrogenys, Andr. ♀ Type. $\frac{1}{2}$ natural size.

PLATE XIV.

Rhizomys badius, Hodgson. $\frac{3}{4}$th natural size.

PLATE XV.

Rhizomys minor, Gray. $\frac{3}{4}$th natural size.

PLATE XVI.

Crania of species of *Rhizomys* of natural dimensions—

Fig. 1. *R. pruinosus,* Blyth, in profile with mandible.
,, 2. ,, ,, ,, upper surface of skull.
,, 3. ,, ,, ,, lower surface of skull.
,, 4. *R. badius,* Hodgson, side view with mandible.
,, 5. ,, ,, ,, upper surface of skull.
,, 6. ,, ,, ,, lower surface.
,, 7. *R. minor,* Gray, in profile with mandible.
,, 8. ,, ,, ,, upper surface.
,, 9. ,, ,, ,, palatal view.

PLATE XVII.

Mus bowersi, Anderson; $\frac{2}{3}$rds the natural size ♂.

PLATE XVIII.

Sciurus blandfordi, Blyth; male $\frac{2}{3}$rds natural size.

PLATE XIX.

Sciurus gordoni, Anderson; male $\frac{2}{3}$rds natural size.

PLATE XX.

Sciurus sladeni, Anderson; male $\frac{2}{3}$rds natural size.

PLATE XXI.

Sciurus alstoni, Anderson; $\frac{3}{4}$th natural size.

PLATE XXII.

Pteromys yunnanensis, Anderson; male $\frac{1}{4}$th natural size ♂

PLATE XXIII.

Pteromys (*Sciuropterus*) *pearsoni*, Gray; $\frac{1}{2}$ natural size.

PLATE XXIV.

Skulls of species of *Manis* of natural dimensions:—

Fig. 1. *Manis pendactyla*, Linn., an upper view.
,, 2. ,, ,, palatal surface.
,, 3. The *Manis aurita*, Hodgson, an upper view.
,, 4. ,, ,, ,, ,, palatal surface.
,, 5. *Manis javanica*, Desm., an upper view.
,, 6. ,, ,, ,, palatal surface.
,, 7. Upper surface in outline of the skull of the type of *M. leptura*, Blyth, but = *M. javanica*, Desm.
,, 8. Upper surface in outline of the typical cranium of the *M. leucura*, Blyth, also = *M. javanica*, Desm.

PLATE XXV.

Fig. 1. The Susu or Gangetic Dolphin *Platanista gangetica*, Lebeck. Drawing taken from photograph, the reduction being about $\frac{1}{11}$th the natural dimension of the animal.

„ 2. Aperture of the blow-hole of the same specimen; $\frac{1}{2}$ natural size.

„ 3. Right ear-slit or external auditory foramen of *Platanista*, enlarged twice natural size.

„ 4. The short-snouted *Orcella*, *O. brevirostris*, Owen.

„ 5. Reduced outline of the head of *O. brevirostris* viewed from above, showing the blow-hole placed slightly to the left of the median line; also the lateral prominences of the eyes.

PLATE XXV*a*.

Fig. 1. Dolphin of the Irawady, *Orcella fluminalis*, Anderson. Drawing taken of a male specimen captured near Bhamô, June 1876. Reduced $\frac{1}{8}$th natural size.

„ 2. A bird's eye or dorsal view of the same animal, also $\frac{1}{8}$th natural size.

„ 3. A transverse section through the trunk of the male *O. fluminalis*, cut in a vertical line with the pelvic bones. Reduced.

The lettering applies as follows:—*m. l.*, mesial line of back; *s.*, skin; *b.*, blubber; *s.p.*, spinous process of vertebra; *c.*, centrum; *t.*, transverse process; *m.*, muscles of upper and lower parts of body; *pp.**, right and left pelvic bones; *r.*, rectum cut through; *c. c. c. c.**, commencement of the right and left corpora cavernosa; *c. s.*, corpus spongiosum near commencement; *r.p.*, the retractor penis muscle cut across; *f.*, fibrous connections of the *corpora cavernosa* and attached to the pelvic bones.

„ 4. The right pelvic bone of *Orcella fluminalis* viewed on its under aspect and drawn of natural size: *a.*, anterior end of bone; *p.*, posterior extremity; *i.*, inferior aspect; *a.p.*, place of attachment of penis.

PLATE XXVI.

Fig. 1. A front or ventral view of the opened cavities of the stomach of *Platanista;* the passages between being indicated by curved bristles: *œ.*, œsophagus; *I, II, III, IV,* cavities in sequence; *d.*, duodenum. Reduced $\frac{1}{4}$th natural size.

„ 2. A small portion of the mucous membrane of the first gastric chamber of the fœtal *Platanista*. Of natural size, showing the convoluted mucous folds.

Fig. 3. Portion of the duodenal sac of *Platanista*, exhibiting two patches of racemose glands magnified 2 diameters.

„ 4. The valvulæ conniventes of the small intestines at its duodenal end, about natural size.

„ 5. The pancreas of *Platanista*, *l.*, with its ducts laid open and showing their relations to one another and to the ductus communis choledochus: *i.*, intestine; *s.*, stomach; *o.*, orifice of ductus communis choledochus in duodenum. Reduced.

„ 6. Interior of the common bile duct of *Platanista* laid open, of natural dimensions. It demonstrates an upper smooth mucous membrane, below which commences slight sacculation (*s.*), becoming valvular towards (*i.*), the intestinal extremity.

„ 7. The microscopic appearance of the upper patch of mucous cups or crypts of the ductus communis choledochus in *Platanista*, magnified about $\frac{1}{50}$.

„ 8. The spleen and subjacent membrane *in situ* of the Susu, $\frac{1}{2}$ natural size.

„ 9. Opened splenic sacs and their subsidiary sacculi of the same animal; these dilatations being filled with a grumous substance, in the fresh condition. Drawn of natural dimensions.

„ 10. Posterior or abdominal surface of the liver of the *Platanista*, $\frac{1}{3}$rd natural size: *l.*, round ligament; *v. c.*, vena cava; *h.*, hepatic artery, duct, and portal vein.

„ 11. The *Platanista's* cæcum and accessory gland reduced $\frac{1}{2}$: *cæ.*, cæcal diverticulum; *i.*, ileum; *c.*, colon in part; *g.*, gland.

PLATE XXVII.

Fig. 1. Foreshortened anterior view of snout and opened mouth of the fœtus of *Orcella brevirostris*, $\frac{1}{2}$ natural size: *a.*, oral angle; *e.*, eye; *b.*, upper labial bristles; *t.*, tongue; *ph.*, pharyngeal aperture; *c.*, mucous crypt on velum palate; *p.*, palate.

„ 2. Tongue and larynx removed from *Orcella*. Seen from above with portion of buccal and faucial or post-palatine soft parts spread out; the apex of glottis peering out of the posterior narial chamber. Reduced $\frac{1}{3}$rd: *t.*, tongue; *p.*, papillæ of post-lingual region; *g. o.*, patch of faucial gland orifices; *a. e.*, aryteno-epiglottic cartilages or summit of glottis.

„ 3. A portion of the faucial membrane of *Orcella brevirostris* spread out and superficially dotted, with also papillary protuberances; the former (*g. o.*) being the orifices of glands whose deep structure is displayed in the succeeding figure.

„ 4. The under-surface of the same piece of mucous membrane, showing the deep elongated racemose glands (*g.*) continued from the superficial orifices in question. This and fig. 3, both of natural dimensions.

Fig. 5. The cavities of the stomach of an adult *Orcella brevirostris*, opened from below, $\frac{1}{3}$rd natural size: *œ.*, œsophagus; I, II, III, the three gastric chambers, and IV, the duodenal chamber, the psssages between which having rods passed through them, as in *Platanista; d.*, duodenum; *v.*, cut attachments of the stomach, their continuation behind being hidden in this view; *g.* points to an asterisk (*), which indicates the position of a hæmo-lymphatic gland otherwise not brought into view (*see* fig. 23).

,, 6. A highly magnified view of a group of the œsophageal glands of *Orcella* in horizontal section, and enlarged to about $\frac{1}{200}$ diameters.

,, 7. A section of the stomachal gland indicated by the asterisk (*) in fig. 5, and which same body has evident relation to the blood-vessels and enlarged lymphatics: *a.*, thick-walled arteries and *v.*, veins which pierce, *g.*, the glandular substance, while *t.* points to imbedded tendinous or gristly material.

,, 8. A portion of the remarkable blood-vessels of the stomach of *Orcella brevirostris*, $\frac{2}{3}$rd natural size. They exhibit an irregular series of pouches or enlargements (some here partially opened), which, there is reason to believe, communicate with the lymphatic system, and they appear to correspond to the so-called "moniliform tube" described by Professor Turner in the genus *Sibbaldius*.

,, 9. The ductus communis choledochus of *Orcella* laid widely open, showing the finely rugose character of the mucous coat, and indicating *h.* and *p.*, the orifices of the pancreatic hepatic ducts, $\frac{1}{2}$ natural size.

,, 10. The mucous folds of the duodenum of *Orcella brevirostris* as contradistinguished to the marked valvulæ conniventes of *Platanista* (compare fig. 4, pl. XXVI), about natural dimensions.

,, 11. Spleen of *Orcella*, with accessory splenules, $\frac{1}{2}$ natural size.

,, 12. The posterior face of the liver of *Orcella*, $\frac{1}{5}$th natural size: *v.c.*, vena cava; *h.*, hepatic vessels and duct; *n.*, notch terminating sulcus between right and left lobes.

,, 13. The diaphragmatic aspect of the liver and stomach in natural position of *O. brevirostris*, reduced to $\frac{1}{6}$th natural size: *b.*, the broad ligament dividing the liver into dextral and sinistral areas; I and II, portions of walls of stomach, and IV, duodenum sack; *f.*, fold of great omentum; *d.*, duodenum.

PLATE XXVIII.

Fig. 1. Sketch of the fleshy portion, valves or cushions and the narial sacks of the blow-hole of *Platanista gangetica;* these being removed *en masse* and exhibited as an anatomical preparation from above and with the sacs opened: *o.*, orifice of blow-hole, its lips cut open; *p.*, pair of fibrous pads.

Fig. 2. The interior of the larynx of *Orcella brevirostris*, of natural dimensions. By a vertical section the posterior wall of the chamber has been slit up and the opposite moieties everted, the anterior, lateral walls and bottom of the cavity, therefore, appear only to be those displayed : *e.*, epiglottis ; *a.*, arytenoid cartilage ; *c.*, cricoid in section ; *ar.*, arytenoideus muscle in cross section, on the right side, almost or as if continuous with (cap), the crico-arytenoideus posticus ; *v.*, a vascular meshwork enclosed within fibrous tissue and superficial to the preceding structures ; *s.* refers to the multitudinous sacculations, both forming the floor and antero-inferior laryngeal wall : a raised septal band occupies the median line continuous with the main radial septæ of the floor.

,, 3. A view (natural size) taken as far as the middle line of the right side and from behind of the lower part of the tubuliform posterior nares of *Platanista*. A segment of the protruding glottis is seen behind, to the right and front of which the opened posterior nares show orifices of the eustachian tube. This latter has a remarkable grooved and saccular character, some of these representing communicating canals split up ; diverticula being obvious : *ph.*, cavity of pharynx ; *e.*, epiglottis ; *a.*, arytenoid cartilage ; *p. n.*, posterior nares ; *eu*^{1}., *eu*^{2}., eustachian canal ; *d.*, diverticulum.

,, 4. A sketch, also of natural size and from the same animal, of an eustachian dilatation. As in fig. 3, it likewise is the right side, but from a different point of view, *viz.*, interiorly looking into the passage from the gular sac prior to its opening into the posterior nares : *t.* indicates a tendinous cord passing from wall to wall.

,, 5. Another view of the eustachian sac of the *P. gangetica*, natural size. This is on the left side, and also exhibits the characteristic septa sacculations, ramifying channels, and chordæ tendineæ.

,, 6. Anterior or under surface cartilages of the right moiety of the larynx of *Platanista*. Reduced to $\frac{3}{4}$th natural size.

,, 7. Posterior or upper surface of same, $\frac{3}{4}$th natural size.

,, 8. Under surface of larynx of *Orcella brevirostris*, its right half reduced $\frac{1}{2}$ natural size.

,, 9. Posterior or upper surface of fig. 8, also $\frac{1}{2}$ natural size.

,, 10. A ventral view of portion of the trachea of *Platanista gangetica*, of natural dimensions. The peculiarities of the cartilaginous rings as described in the text are here accurately displayed.

,, 11. A portion of the trachea of *Orcella brevirostris*, likewise natural size and same aspect as preceding.

PLATE XXIX.

Fig. 1. Lungs, heart, and great vessels of *Platanista*, $\frac{1}{3}$rd natural size.

,, 2. The same parts in *Orcella brevirostris*, but somewhat more in natural position, also reduced to $\frac{1}{3}$rd natural size. Similar lettering applies to each figure: *l.*, lung; *d.*, diaphragm; *pc.*, pericardium; *r. v.*, right ventricle; *l. v.*, left ventricle; *r. a.*, right auricle; *l. a.*, left auricle; *p.*, pulmonary artery; *ao.*, aorta; *v. c.*, vena cava; *g. l.*, enlarged patches of lymphatic glands; *Pgl.*, special pair of pulmonary glands; *t. h.*, thyroid gland; *tr.*, trachea; *p. n.* pneumogastric nerve; *m.*, internal mammary artery.

PLATE XXX.

Fig. 1. Upper view of the brain of *Platanista*, of natural size, and showing a symmetry of the cerebral lobes and convolutions.

„ 2. Right lateral aspect of the same brain.

„ 3. Base of the brain of *Platanista*. 2, optic nerve, only a minute thread; 5, 6, 7 and 8, corresponding nerves of right side; *p.*, pituitary body; *a.*, the corpora albicantia; *pv.*, pons varolii; *m.*, medulla oblongata; *t.*, temporal lobe; *sy.*, sylvian cleft.

„ 4. Mould of the brain cavity of *Orcella brevirostris*, Owen, $\frac{1}{2}$ its natural magnitude, and seen from above.

„ 5. Left lateral face of same cast of the brain cavity.

„ 6. Its basal aspect with impressions of some of the cranial foramina for nerves and vessels extant.

PLATE XXXI.

Fig. 1. The external genital region and fœtus within the left horn of the uterus of *Platanista gangetica*. Drawn to scale $\frac{1}{3}$rd natural size: *a.*, anus, the genital slit apparently continuing forwards from it; *m.*, mammary orifice; *o.*, ovary; *f.*, fallopian tube; *fm.*, its fimbriated extremity; *p.*, pavilion; *am.*, amnion; *c.*, umbilical cord; *t.*, tail of the fœtus twisted in a corner of the sac; *h.* points to the minute hairs on the muzzle which afterwarwds are lost; *e.*, eye.

„ 2. A view of the folds from the os uteri internum of a gravid *Platanista*, reduced $\frac{2}{3}$rd natural size.

„ 3. A portion of the inner wall of the uterus of *P. gangetica* showing at *f.* the entrance of the fallopian tube. Drawn to natural size.

PLATE XXXII.

Fig. 1. A virgin uterus of the Gangetic Dolphin, laid open from behind; natural size: *v.*, vulva dragged apart; *va.*, vagina; *cf. of.*, cross and oblique folds; *os.*, *os uteri externum*, with sections of thick mucous folds beneath; *u.*, cavity of the uterus; *f.*, horn of uterus opened; *o.*, right ovary; *r.*, rectum.

Fig. 2. The outer genital aperture of the same young female displayed as an anatomical preparation, and held open by a style to show specially *cl.*, the clitoris. Drawn of natural dimensions.

„ 3. An abdominal view of the unimpregnated uterus of *Platanista* reduced to $\frac{1}{3}$rd natural size: *r.*, portion of rectum; *u.*, uterus; *o.*, ovary; *fm.*, fimbriated extremity, pavilion and orifice of the fallopian tube; *b.*, urinary bladder; *po.*, pouch or peritoneal diverticulum alongside the neck of the bladder. Reduced.

„ 4. Sketch of the fœtus of *Platanista gangetica* from a photograph $\frac{1}{2}$ natural size. Dorsal view and reduced to scale $\frac{1}{3}$rd of the natural size of the animal: *b.*, blow-hole; *d. f.*, dorsal fin; *c.*, coil of the umbilical cord.

PLATE XXXIII.

Fig. 1. The genitalia and fœtus *in utero* of *Orcella brevirostris*, reduced $\frac{1}{3}$rd natural size: *r. h.*, the empty right horn of the uterus, the left is opened, exposing the young animal *in situ* and bent upon itself; *am.*, amniotic sac; *c.*, umbilical cord; *t.*, tail twisted in a corner of the folds of the cavity; *b.*, position of blow-hole; *h.*, hairs or bristles of snout; *m. g.*, mammary gland uncovered; *m.*, the external mammary slit, the nipple being hidden in the slit; *v.*, vulval cleft; *pe.*, perinæum; *a.*, anus; *f.*, fallopian tube; *fm.*, its fimbriated extremity.

„ 2. A sketch of the *os uteri internum* of gravid of *O. brevirostris*, $\frac{1}{2}$ natural size.

„ 3. The inner uterine surface and opening of the fallopian tube (*f.*) of the same cetacean, and about natural size.

PLATE XXXIV.

Fig. 1. A deep view of the pregnant uterus and neighbouring parts of *Platanista* (*see* text) seen with part of the left cavity wall removed, the whole reduced to $\frac{1}{6}$th of its original magnitude: *le.*, interior of left horn; *pa.*, passage leading to *rh.*, the right uterine horn; *o.*, ovary of left side; *r.*, rectum cut short.

„ 2. Fœtal envelopes of *Platanista gangetica*, reduced to $\frac{1}{8}$th their natural size. The smaller right horn is turned forwards to show the uterine pouch, the larger gravid left horn has its chorionic membrane slit open: *ch.*, chorion; *am.*, amnion; *t.*, termination of the amniotic sac on the right side; *al.*, allantoid, showing dots or specks which represent the amniotic corpuscles; *f. o.*, pole corresponding to left fallopian orifice; *c.*, umbilical cord; *b. s.*, position of one of the bare spots of right chorion, *viz.*, that corresponding to the mouth of the fallopian tube; *sp.*, sac which depends into common cavity of uterus.

Fig. 3. Drawing (natural size) of the bare patch on sac (*sp.*, fig. 21) depending into the common cavity of the uterus, and placed opposite to the *os uteri internum* of *Platanista*.

,, 4. A portion of the chorion of *Orcella brevirostris* with a bare surface occupied by a pedunculated body (*p.*), of natural size.

,, 5. The glandular body, of natural size, obtained from the allantois of *Platanista*. *See* description of same in text.

,, 6. A portion of the umbilical cord of the Gangetic Dolphin *Platanista*, of natural size, and showing the remarkable moniliform character of the vessels. A slice of the wall has been taken away, and three or four enlargements or chambers are seen communicating by narrow orifices, through which pointers have been introduced.

,, 7. A drawing magnified 2 diameters of a similar vascular dilatation to the foregoing in one of the central vessels of the cord of *Platanista*.

,, 8. Much enlarged view of two yellow bodies, or supposed lymphatic sacs, *l. s.*, of the cord of *Orcella*, occurring in the loose areas between the vessels, *v.*

,, 9. A drawing illustrative of the sac and other bodies on the umbilical cord of *Orcella brevirostris*. The part represented is at the bifurcation of the vessels to the right and left cornua, and is about natural size: *gl.*, hollow glandular structure, with which at the upper end there communicates (*m.*) a beaded or moniliform tube and inferiorly another vessel leading to (*l. h.*), an opened lymphatic heart? ; *l. h.*,^{2} a second smaller lymphatic heart? ; *pp.* represent two of the pedunculated bodies described in the text.

,, 10. A representation, of natural size, of the manner in which the vessels of the umbilical cord of *Orcella* intercommunicate obliquely the one with the other.

PLATE XXXV.

Fig. 1. A drawing from nature, but reduced to ⅓rd of its original dimensions, of the bare patch in the left horn of the chorion of *Platanista* running along the course of the umbilical vessels: *d.*, dorsal or anterior margin ; *v.*, ventral or posterior margin ; *r.*, right pole ; *l.*, left pole ; *c.*, crypt where the vessels break off ; *p.*, small pedunculated body.

,, 2. The surface of the chorion of *Orcella brevirostris* exhibiting patches of bare spots: *v.*, blood-vessels traversing the membrane ; natural size.

,, 3. A piece of the chorion of *Orcella brevirostris* enlarged 4 times natural size to display a single bare spot and villous character of membrane around: the bare surface was opposed to a bare surface of the uterus.

,, 4. A piece of the uterus of *Orcella brevirostris*, showing the bare patches on its mucous surface. Natural size.

,, 5. A small portion of the same enlarged 4 times, and demonstrating a bare spot occupied in its centre (*u.*), with orifice of the utricular gland.

Fig. 6. The bare patch along the course of the umbilical vessels of left cornu of the chorion of *Orcella*, drawn of natural size: *r.*, right and *l.*, left pole; *d.*, dorsal or anterior and *v.*, ventral or posterior margin; *p.*, pedunculated body.

" 7. The surface of the chorion of *Platanista*, exhibiting bare patches, vascular elevations and villous membrane, about natural size.

" 8. One of the chorionic bare spots and surrounding villous membrane also of *Platanista*, enlarged 4 diameters.

" 9. The internal uterine surface of *Platanista* demonstrating its mucous membrane, with scattered irregular sized bare patches. Natural size.

" 10. A single bare spot of the preceding specimen enlarged 4 times: the orifice of a utricular gland is seen in the middle.

PLATE XXXVI.

Various microscopical sections exhibiting intimate structure of the skin, teeth, eye, stomach and umbilical cord of *Platanista gangetica* and *Orcella brevirostris*—

Fig. 1. A piece of the cuticle of *Platanista* as seen from below, under a 2-inch object glass.

" 2. A vertical section of the skin of the fœtal *Platanista* from the upper jaw around one of the hairs (the latter being an appendage of a temporary kind): *p.*, papillary layer; *c.*, coarse connective tissue, containing fat globules; *f. m.*, strong fibrous and partially muscular layer with abundance of fatty and oily tissues; *h.*, hair or rudimentary bristle with firm tissue around, and cut somewhat obliquely; *v.*, a large vascular space. Magnified about 15 diameters.

" 3. A vertical section of the skin of the snout of the young *P. gangetica* enlarged about 6 diameters: *p.*, papillary layer; *c.*, coarse connective tissue; *b.*, layer of blubber, composed of masses of fat cells intermixed with coarse fibrous tissue; *f.*, layer of coarse fibres and finer connective tissue almost devoid of fat globules; *m.*, muscular layer, the bundles being cut obliquely.

" 4. A view of a portion of a transverse vertical section of the lower jaw with non-errupted tooth *in situ*: *d. g.*, the dental groove, here, however, shown as if opened at the top; *ep.*, epithelial lining of same, and in continuity with (*s.*), skin of gum; *c.*, connective or fibroid tissue of the deep skin textures; *e.*, enamel layer of tooth reaching quite to its base; *d.*, dentine only partially developed above, and imperceptibly blending with the pulp, the latter exhibiting no traces of cement or osteo-dentine; *c. b.*, large meshwork of cancellated bone tissue, here only yet in process of formation; *v.*, vessels supplying capillaries to bone and tooth pulp; *n.*, nerves immediately above. Enlarged about 5 times.

Fig. 5. A magnified view of a special section of a tooth of a young Gangetic Dolphin. It shows a complete enamel (*e.*) layer, and the centre composed of characteristic dentine (*d*).

" 6. Adult tooth of *Platanista*, from the middle of the lower jaw, in vertical section. About twice natural size.

" 7. Ditto of a tooth behind the middle × 2 diameters.

" 8. Ditto from the posterior third of the row, about 2 diameters. In the three last figures *e.* signifies enamel; *d.*, dentine; and *o. d.*, osteo-dentinel.

" 9. A thin transparent longitudinal, vertical section of the eye-ball and surrounding soft textures of a full grown *Platanista*, and of natural size.

" 10. The same section enlarged about 6 times and showing the various parts as follows:—*e.*, eyelids, with thick pigmental papillary skin covering; *m.*, cut muscular fibres of the palpebræ, imbedded in firm fibrous tissue; *c.*, cornea and its conjunctival covering; *a.*, aqueous chamber; *v.*, vitreous chamber and humour; *l.*, position which the lens should occupy; *i.*, iris; *ch.*, choroid coat; *s.*, sclerotic; *op.*, optic nerve; *f.*, fatty envelope of eye-ball; *g.*, gland.

" 11. A transverse section of the umbilical cord of *Platanista*, enlarged twice natural size: *a.*, arteries; *v.*, one of the umbilical veins; *u.*, urachus; *g. b.*, glandular body; *v. s.*, vascular spaces.

" 12. Vertical section through the wall of the first cavity of the stomach of *P. gangetica*, enlarged 4 times natural size.

" 13. A strip of the same vertical section of first stomach more highly magnified: *ep.*, epithelial layer; *g.*, glandular layer; *c.*, connective tissue layer or submucous coat; *m.*, muscular layers; *fs.*, fibroserous coat; *v.*, blood-vessel.

" 14. A vertical section through a portion of the wall of the first gastric cavity of *Orcella brevirostris: ep.*, epithelial layer; *c. g.*, columnar layer or mucous glandular layer; *c.*, connective tissue of submucous coat × 10 diameters.

" 15. Vertical section of the wall of the second gastric cavity of *Orcella: g.*, glandular layer; *c.*, connective tissue or submucous coat; *a.*, thick-walled arteries piercing same, and shown both in transverse and deeper in oblique section. Highly magnified.

" 16. An enlarged view of portion of a vertical section of the pale piece of the ductus communis choledochus of *O. brevirostris*, about 20 times natural size: *g.*, glandular and epithelial layer; *c.*, layer of connective tissue (submucous coat); *m.*, muscular layers; *fs.*, fibroserous investment.

PLATE XXXVII.

Microscopical structural peculiarities of the glands of the stomach, the lungs, the larynx, the female genital organs, and placenta of *Orcella* and *Platanista*—

Fig. 1. A vertical section of a small piece of the upper layer of mucous membrane

of the second cavity of the stomach of *Platanista gangetica* from the area of the so-called "cup-shaped bodies," one of these latter being shown, sunk within the tissues, among which are somewhat wavy glands. Enlarged about 20 diameters.

Fig. 2. The same membrane of second stomach of *Platanista* shown on its free mucous surface, and exhibiting the "cup-shaped bodies" in transverse section. Magnified about 20 diameters.

„ 3. A transverse section of portion of the gland which lies outside the stomach of *O. brevirostris, viz.,* between its second and third cavities (*see* Pl. XXVII, figs. 5, 9, and fig. 7) × 8 diameters: *v.*, part of one of the large blood-channels cut in its longitudinal direction and *v.** a smaller tributary blood-vessel; *g. g.*, the proper gland substance.

„ 4. A section of one of the glands from the outside and root of the lung of *P. gangetica.* It shows both large and some of the smaller blood-channels and a mass of the gland substance proper in which here and there are open spaces × 10 diameters: at *c.* a few of the lymph corpuscular bodies are shown much more highly magnified.

„ 5. A portion of the so-called "pulmonary gland" found in the pericardial region of *Orcella,* as seen in section. Various large irregular-shaped vascular areas (*v.*) are obvious, the glandular substance surrounding these and marginally at *r.;* some of the fibres of the retiform tissue are noticeable. Enlarged × 10 diameters.

„ 6. A vertical section exhibiting the glandular structures in the walls of the mucous membrane of the larynx of *O. brevirostris: g.*, superficial glandular body; *g.*,* glands situated in the sacculations of the larynx.

„ 7. A perpendicular section through the eustachian or guttural pouch of *Platanista.* This exhibits the superficial papillæ-like folds of the mucous membrane with their imbedded glands, the crypts, submucous tissue, and muscular fibres in cross section. Enlarged about 10 diameters.

„ 8. A much more highly magnified view of a small portion of the preceding preparation: *g.*, glandular follicles; *c.*, connective tissue with corpuscula; *m.*, muscular fibres in cross section.

„ 9. A superficial view of a small piece of the inner free mucous membrane of the gravid uterus of *Orcella.* This shows a bare spot, passing through which is a dichotomously branched utricular gland *u. g.*, capillary vessels being obliquely directed beneath its branches. Magnified about 12 diameters.

„ 10. A transverse section of a segment of the ovary of the fœtal *Orcella brevirostris,* magnified about 6 diameters: *o.*, ovigerms forming a peripheral cortical zone; *g. v.*, Graafian vesicle; *sp.*, space where Graafian follicle has fallen out; *s.*, stroma of medullary part.

„ 11. Segment of the ovary from the gravid female *Orcella brevirostris.* This transverse section cuts through a corpus luteum (*c.l.*): *o.*, ovum: *f.*, empty follicle from which the ovum has escaped (possibly in making the section); stroma of the ovary; *p.b.*, pale band described in text. Magnified 12 diameters; *a.*, a highly magnified representation of the cells composing the medullary stroma.

Fig. 12. A vertical section of a small piece of the chorion of *Platanista* cutting through (*b.*) a bare spot, on either side of which are villous processes (*v. p.*), capillary vessels (*v.*) penetrating these. Magnified 12 diameters.

„ 13. Superficial view of a bare spot of the chorion of *P. gangetica*, with the blood-vessels injected. Enlarged about 10 times natural size.

„ 14. A small portion of the chorion from the non-gravid horn of the uterus of *Orcella brevirostris*. Shown in vertical section, and enlarged 6 times natural size.

„ 15. A little piece of the amnion of *Platanista* exhibiting the so-called grey bodies (*g. b.*) *in situ*, in the otherwise granular membrane: × 25 diameters: *a.*, three of the club-shaped, crystalline constituents composing the grey bodies, and highly magnified.

„ 16. A section of the gland-like body (or hippomanes) from the allantois of the Gangetic Dolphin (*Platanista*). The various-shaped crystalline particles are distributed throughout the meshes of the corpuscular network. Highly magnified.

PLATE XXXVIII.

Chiefly devoted to a microscopical exposition of the female genital passages and cavities and the utricular glands of *Platanista* and *Orcella*.

Fig. 1. A section through the wall of the uterus of the fœtal *Platanista*. Enlarged about 6 times natural size.

„ 2. A segment of the previous section, highly magnified: *g.*, glandular and epithelial layer, *u.* being the utricular glands; *c.*, connective tissue or submucous layer; *m.*, muscular coat; *fv.*, *fibrovascular* layer; *fs.*, fibroserous investment.

„ 3. A segmental section of the wall of the common cavity of the uterus of *Orcella brevirostris*: *m. f.*, mucous folds and free villous surface; *u. g.*, utricular glands; *v.*, vascular area in the connective tissue. Enlarged 8 diameters.

„ 4. A portion of a vertical section of the corun of the uterus of the virgin *Platanista*. Enlarged about 18 diameters. This shows a plentiful development of utricular glands: *g.*, glandular and epithelial layer; *c.*, connective tissue and capillaries; *m.f.s.*, muscular, fibrovascular, and serous layers.

„ 5. A section through the wall of the virgin uterus of *Orcella*, and wherein no utricular glands are visible. Enlarged about 8 times natural size.

Fig. 6. A highly magnified view of a segment of the preceding virgin uterus of *Orcella*, and where the absence of utricular glands is still more apparent: *c.*, connective tissue, submucous and free epithelial mucous layers, wherein the fibrous tissue, fusiform corpuscles, and capillaries are well shown; *m.*, muscular and fibrovascular layers; *s.*, serous coat.

" 7. A piece in vertical section of the wall of the left cavity of the virgin uterus of *Orcella*, and also demonstrating that no utricular glands are here present: *f.*, free mucous folds.

" 8. A view of portion of the gravid uterus of *Platanista* close to the bare spots and exhibiting in profusion the convolutions of utricular glands.

" 9. A horizontal section of the vagina of the gravid *P. gangetica* seen under an inch object lens. It illustrates the somewhat stellate appearance of the here deeply situate mucous glands, described in the text.

" 10. Specimen exhibiting a vertical section of the wall of the gravid horn of the uterus of *Orcella brevirostris*, enlarged about 4 times natural size. It demonstrates the villous folded nature of the mucous surface, and in the loose areolar tissue serpentine portions of many of the utricular glands, and towards the lower muscular side the cut orifice of a large blood-vessel.

" 11. A highly magnified representation of portion of the above vertical section of the gravid horn of *O. brevirostris*: *c. l.* denotes the crypt layer; *gl.*, the glandular area, and at *t.* the transverse section of a utricular gland. The epithilium lining the glands themselves is characteristically obvious.

" 12. This corresponds to one of the 4 dark stellate spots of fig. 9 from the vagina of a gravid female *Platanista*, but highly magnified. The figure is from a horizontal section, as in fig. 9, and shows how the branches radiate from the central receptacle.

PLATE XXXIX.

Fig. 1. Side view of an adult male skull of *Platanista gangetica*, reduced $\frac{1}{2}$ natural size.

" 2. The female skull of an adult *P. gangetica* drawn to same scale: *md.*, mandible; *mx.*, superior maxillary; *cr.*, its crest; *pmx.*, premaxillary; *f.*, frontal; *p.*, parietal; *sq.*, squamosal; *z.*, zygomatic process of squamosal; *o.*, orbit.

" 3. A lateral view of the spinal column of *Platanista* from the atlas to last lumbar vertebra: *c.*, cervical; *d.*, dorsal; *l.*, lumbar region.

" 4. The remainder of the same spine: *cd.*, caudal vertebræ.

" 5. Outer view of the sternum and costal cartilages of an adult specimen of *Platanista*: *p.*, præsternum; *a.*, angle; *n.*, notch; *f.*, facet for articulation of second rib; *m.*, mesosternum; *z.*, ziphosternum; *3* third and *4* fourth rib cartilages.

Fig. 6. Præsternum of another specimen of *Platanista* showing variety in the shape of the bone.

„ 7. Another variety in the figure of the first sternal piece of the Gangetic Dolphin and belonging to a young animal.

PLATE XL.

Tabular view of the separated cranial bones of a mature fœtus of *Platanista gangetica*, all drawn of natural size.

Fig. 1. The frontal bone looked at from behind and within, *i. e.*, its cerebral surface: *op.*, minute optic foramen of left side; *fe.*, the back of the exterior frontal expansion of the bone; and *vo.*, projecting vomerine spine.

„ 2. Supra-occipital, inside view showing (*c.*) median crest with lateral cerebral concavities (whereon the latter is placed) and below the cerebellar fossa with (*cl.*) cleft or fissure reaching the foramen magnum.

„ 3. Posterior external surface of the right ex-occipital: *c.*, condyle; *j.*, jugular space.

„ 4. An inside view of the left ex-occipital bone, (*j.*) being the jugular vacuity, the lateral sinus lying alongside.

„ 5. The inner surface of the basi-occipital, (*fm.*) resting at the edge of the foramen magnum.

„ 6. Outer surface of the right parietal bone, (*sq.*) being the roughened surface of the squamosal suture.

„ 7. Inner cerebral aspect of the left parietal; the vascular groove (*g.*) of the *arteria meningea media* being well marked below.

„ 8. A view from below of the right temporal, or squamo-tympanic bones, (*z.*) being the zygomatic process and (*sph.*) the sphenoidal process.

„ 9. Upper surface of the same bone of the left side: *sq.* roughened squamous sutural surface; *ty.*, tympanic; *pe.*, periotic; *sph.*, sphenoidal sutural surface; *z.*, zygoma.

„ 10. Interior aspect of the right tympanic bulla, *i.e.*, that applied to the periotic.

„ 11. The basisphenoid, its upper cerebral surface.

„ 12. The palatal; (*n.*) surface of bone forming the wall of the narial passage.

„ 13. Internal surface of left pterygoid: *n.*, smooth surface forming wall of narial passage; *pn.*, osseous limit posteriorly of narial passage; *sms.*, spheno-maxillary sinus; *p.*, palatine surface; *bss.*, basisphenoid suture; *op.*, orbital process; *bss.*, basisphenoidal surface.

„ 14. Right pterygoid, its external surface: *p.*, palatine surface; *mxp.*, maxillo-palatine process; *sts.*, spheno-temporal surface; *op.*, orbital process; *pn.*, bony limit posterior nares.

Fig. 15. The right malar bone, outer surface: *o. p.*, orbital process.

„ 16. The inner surface of the same bone.

„ 17. The left maxillary, premaxillary and nasal bone in opposition and seen from the outside.

„ 18. The aspect of the same bones, also well showing the very characteristic overhanging maxillary, &c. The same lettering applies to this and fig. 17: *c.*, crest; *n.*, nasal bone; *pmx.*, premaxillary; *mx.*, superior maxillary bone.

„ 19. The left mandible, its exterior surface; *c.*, condyle; *a.*, angle; *co.*, coronoid process; *f.*, pointing to two foramina.

„ 20. Left moiety, seen from below, of the hyoid arch: *bh.*, basihyal; *th.*, thyrohyal, *sh.*, stylohyal; *ch.*, ceratohyal. The letters point to the bony elements, all the other pieces being cartilaginous.

PLATE XLI.

Fig. 1. A cast of the cochlea, nerve tracts, and semicircular canals of *Platanista gangetica*. Their natural size.

„ 2. The opposite side of the same preparation.

„ 3. Drawing of a cast of the semicircular canals of *Platanista*, enlarged three diameters.

„ 4. A cast of the cochlea, nerve tracts, and semicircular canals of *Orcella brevirostris*. Their natural size.

„ 5. The opposite side of the same preparation.

„ 6. Sketch of the semicircular canals of *Orcella brevirostris*. Enlarged three times natural size from the preceding specimen.

„ 7. A cast of the cochlea, nerve tracts, and semicircular canals of the genus *Globiocephalus*. Natural size.

„ 8. The opposite side of the same preparation.

„ 9. Its semicircular canals enlarged three times natural size.

„ 10. View cast of the cochlea, nerve tracts, and semicircular canals of *Monodon monoceros*. Of natural size.

„ 11. The opposite side of the preceding preparation of the narwhal.

„ 12. Semicircular canals of *Monodon*, enlarged three diameters.

„ 13. Left scapula of the Gangetic Dolphin *Platanista gangetica;* its outer surface: *g.*, glenoid concavity; *a.*, acromion process; *c.*, rudimentary coracoid process.

„ 14. Dorsal aspect of the bones of the left forearm and manus of *Platanista;* reduced. The lettering applies as follows: *h.*, humerus; *r.*, radius; *u.*, ulna; *tm.*, trapezium; *rd.*, radiale or os scaphoid; *o. i.*, os intermedium or lunare; *td.*, trapezoid; *mg.*, os magnum; *c. u.*, cuneiform and unciform; *m, m, m, m.*, the metacarpals; I, II, III, IV, V, digits.

Fig. 15. Upper surface of the two last dorsal and the first lumbar vertebra of *Platanista gangetica;* reduced from nature: X and XI, segments of the tenth and eleventh ribs; *t.*, transverse process of the first lumbar vertebra.

„ 16. Outlines in a reduced scale of from I to X of the ten foremost ribs from the right side of *P. gangetica.*

PLATE XLII.

The characteristic parts of the skeleton of the Irawady Dolphin *Orcella fluminalis,* Anderson. Figures all considerably reduced from their natural dimensions—

Fig. 1. The cranium in side view, $\frac{1}{2}$ natural size.
„ 2. The superior aspect of the same skull, $\frac{1}{2}$ natural size.
„ 3. The lower base of the same skull, $\frac{1}{2}$ natural size.
„ 4. Right moiety of the hyoid arch, $\frac{1}{2}$ natural size: *bh.*, basihyal; *th.*, thyrohyal; *ch.*, ceratohyal; *sh.*, stylohyal.
„ 5. Fifth cervical vertebra, $\frac{1}{2}$ natural size.
„ 6. First dorsal vertebra, „ „
„ 7. Seventh dorsal vertebra, „ „
„ 8. First lumbar vertebra, „ „
„ 9. The forearm and manus: *h.*, humerus; *r.*, radius; *u.*, ulna, $\frac{1}{2}$ natural size.
„ 10. The thirteen ribs seen from the outside, $\frac{1}{3}$rd natural size.
„ 11. The right pelvic bone, seen from in front, $\frac{2}{3}$rd natural size.

PLATE XLIII.

A comparison of some of the bones of *Orcella fluminalis* and of *O. brevirostris*—

Fig. 1 Left scapula of *O. fluminalis,* Anderson*;* its outer surface, $\frac{1}{2}$ natural size.
„ 2. View of glenoid cavity of the same bone, $\frac{1}{2}$ natural size.
„ 3. Atlas and axis of *O. fluminalis,* seen from in front, $\frac{1}{2}$ natural size.
„ 4. Right tympanic bone, &c., of *O. fluminalis*; its interior face and of natural size. Natural size.
„ 5. Sternum of *O. fluminalis,* $\frac{1}{2}$ natural size.
„ 6. Left scapula of *Orcella brevirostris;* its outer surface, $\frac{1}{2}$ natural size.
„ 7. Glenoid concavity of same scapula, $\frac{1}{2}$ natural size.
„ 8. Atlas and axis of *O. brevirostris,* seen from in front $\frac{1}{2}$ natural size.
„ 9. Right tympanic bulla of *Orcella brevirostris,* the interior face of natural size. Natural size.
„ 10. Sternum of *O. brevirostris,* its inner aspect, $\frac{1}{2}$ natural size.

PLATE XLIV.

Fig. 1. Upper surface of *Balænoptera edeni*, Andr., $\frac{1}{24}$th natural size.
,, 2. Side view with mandible of the same specimen.
,, 3. Under-surface of the same skull.
,, 4. The hinder or occipital aspect of the same skull shown $\frac{1}{16}$th of its natural dimension.
,, 5. Anterior surface of the atlas, $\frac{1}{6}$th natural size.
,, 6. The cervical and two dorsal vertebræ, viewed from above and $\frac{1}{6}$th natural size.

PLATE XLV.

Circus melanoleucus, Forster, adult male.

PLATE XLVI.

Circus melanoleucus, Forster, female adult and young.

PLATE XLVII.

Pteruthius aeralatus, Tickel, natural size.
Chleuasicus ruficeps, Blyth, natural size.

PLATE XLVIII.

Chatarrhœa gularis, Blyth, natural size.
Alcippe phayrei, Blyth, natural size.

PLATE XLIX.

Aracnechthra edeni, Anderson, natural size.
Suthora brunnea, Anderson, natural size.

PLATE L.

Hypsipetes yunnanensis, Anderson, natural size.
Culcipeta tephrocephalus, Anderson, natural size.

PLATE LI.

Suya superciliaris, Anderson, natural size.

Pycnonotus xanthorrhous, Anderson, natural size.

PLATE LII.

Phasianus sladeni, Anderson, male and female.

PLATE LIII.

Euplocamus andersoni, Elliott; male.

PLATE LIV.

Bambusicola fytchei, Anderson; male.

PLATE LV.

Geoemyda depressa, Anderson; the male animal $\frac{3}{4}$th natural size.

PLATE LVI.

The under-surface of the shell of *Geoemyda depressa,* $\frac{3}{4}$th natural size.

PLATE LVII.

Emys trijuga, Schweigger, var. *burmana;* animal in side view.

PLATE LVIII.

Fig. 1. Under-surface of the shell of *Batagur trijuga,* Schweig., var. *burmana.*
,, 2. The vertebral plates of the same; 1, 2, 3, 4, 5, the separate scutes.

PLATE LIX.

Fig. 1. *Batagur* (*Morenia*) *petersi,* Anderson; the animal in side view.
,, 2. Under-surface of its shell.
,, 3. Vertebral plates. All figures of natural size.

PLATE LX.

Batagur (*Morenia*) *ocellata,* Dum. et Bib.; a female, natural size.

PLATE LXI.

Fig. 1. Under-surface of the shell of *Batagur* (*Morenia*) *ocellata*, Dum. et Bib.
„ 2. The vertebral plates of same, natural size.

PLATE LXII.

Fig. 1. *Batagur trivittata*, D. and B. ♂.
„ 2. View of vertebral plates.

PLATE LXIII.

Batagur trivittata, D. and B. ♂ under-surface.

PLATE LXIV.

Batagur iravadica, n. s. ♂ juv.

PLATE LXV.

Fig. 1. *Batagur iravadica*, n. s. ♂ juv., under-surface of shell.
„ 2. Vertebral plates.

PLATE LXVI.

Batagur baska, Gray, juv.

PLATE LXVII.

Fig. 1. *Batagur baska*, juv., under-surface of shell.
„ 2. Vertebral plates.

PLATE LXVIII.

Batagur trivittata, D. and B. ♀.

PLATE LXIX.

Fig. 1. *Batagur trivittata*, D. and B. ♀ under-surface of shell.
„ 2. Vertebral plates.

PLATE LXX.

Trionyx peguensis, Gray; dorsal surface of young animal, natural size from life.

PLATE LXXI.

Trionyx peguensis, Gray; abdominal surface of young animal, natural size.

PLATE LXXII.

Trionyx peguensis, Gray; dorsal surface of adult animal; reduced $\frac{1}{2}$ natural size from life.

PLATE LXXIII.

Trionyx peguensis, Gray; under-surface of the adult; reduced $\frac{1}{2}$ natural size.

PLATE LXXIV.

Emyda scutata, Peters; dorsal surface of female animal; natural size, from life.

PLATE LXXV.

Emyda scutata, Peters; under view of the female, from life; natural size.

PLATE LXXV^{A}.

Figs. 1 to 3. Views of the skull of *B. trivittata*, D. and Bib., figd. Pl. LXII.
,, 4 & 5. ,, of the mandible of ,, ,, ,,
,, 6 to 8. ,, of the skull of the young of *B. baska*, Gray, figd. Pl. LXVI.
,, 9 & 10. ,, of the mandible of ,, ,, ,, ,,
Fig. 11. Ring of bones in the eye of ,, ,, ,, ,,
Figs. 12 to 14. Views of the skull of *Emyda scutata*, Peters, figd. Pl. LXXIV.
,, 15 & 16. ,, ,, mandible of ,, ,, ,,

PLATE LXXV^{B}.

Figs. 1 to 3. Views of the skull of *Geoemyda depressa*, Andr., figd. Pl. LV.
,, 4 & 5. ,, ,, mandible of ,, ,, ,,
,, 6 to 8. ,, ,, skull of *B. (M.) petersi*, Andr., figd. Pl. LIX.
,, 9 & 10. ,, ,, mandible of ,, ,, ,,

Figs. 11 to 13. Views of the skull of *B.* (*M.*) *ocellata*, D. and Bib., figd. Pl. LX.

,, 14 & 15. ,, ,, mandible of ,, ,, ,,

,, 16 to 18. ,, ,, skull of *Batagur iravadica*, Andr., figd. Pl. LXIV.

,, 19 & 20. ,, ,, mandible of ,, ,, ,,

PLATE LXXVI.

Fig. 1. *Oriocalotes kakhienensis*, Anderson.

,, 2. *Japalura yunnanensis*, Anderson.

,, 3. *Tropidophorous berdmorei*, Blyth, var.

,, 4. *Trimeresurus monticola*, Günther, var., side view of head.

,, 5. ,, ,, upper view of head.

,, 6. *Tylototriton verrucosus*, Anderson.

PLATE LXXVII.[1]

Osteological details of *Tylototriton* enlarged—

Fig. 1. Anterior half of centrum of first vertebra viewed from its under-surface: *a a*, lateral facets for articulation with occipital condyles; *b*, odontoid-like process.

,, 2. Similar view of another first vertebra, but with the odontoid-like process resolved into two hemispherical facets.

,, 3. Front view of the first vertebra: *c*, spinous process with its expanded porous crest *h* (lettered *b* by mistake in figs. 3 and 4); *d*, sharp ridge on anterior aspect of spinous process.

,, 4. Posterior view of first vertebra: *c*, spinous process: *h*, porous crest; *e*, concavity for reception of ridge on spinous process of succeeding vertebra; *f*, posterior zygapophyses; *k*, opisthocoelous end of centrum.

,, 5. Lateral view of first vertebra: *c*, spinous process; *f*, posterior zygapophyses.

,, 6. Under-surface of first vertebra: *f*, posterior zygapophyses.

,, 7. Anterior aspect of second vertebra: *h*, porous crest of spinous process *c*; *r*, anterior zygapophyses; *l*, transverse process; *m*, rib; *p*, process on posterior margin, ending in lateral gland; *i*, convex articular facet of anterior of centrum.

Fig. 8. Posterior view of preceding vertebra: *g*, compressed lateral margin of spinous process; other lettering the same as in previous figure.

,, 9. Lateral view of preceding vertebra.

,, 10. Under ,, ,, ,,

,, 11. Anterior view of sacral vertebra: *g*, point opposed to pelvis.

,, 12. Posterior ,, ,, ,,

,, 13. Lateral ,, ,, ,,

---

[1] By an oversight, as already noticed, the original drawings of this plate were not reversed on the stone.

Fig. 14. Under view of sacral vertebra: *g*, point opposed to pelves.
,, 15. Fourth caudal vertebra.
,, 16. Fifth ,, ,,
,, 17. Side view of fifth caudal vertebra.
,, 18. Hypaxial arch of caudal vertebræ.
,, 19. First rib showing the tendency to division *o*, into a capitulum and tuberculum.
,, 20. Third rib with posterior process bearing a small ascending process.
,, 21. Upper view of skull.
,, 22. Lateral ,, ,,
,, 23. Vertical section of skull.
,, 24. Under-surface of skull.
,, 25. Enlarged view of posterior aspect of skull showing *s*, the articular facets for the reception of the hemispheral articular surface of such a first vertebra as in fig. 2, with the condyles external to them; also the fenestra ovalis *t*.
Figs. 26*a* & 26*b*. Outer and inner aspects of premaxillary.
,, 27*a* & 27*b*. Inner and outer views of nasals.
,, 28*a* & 28*b*. Outer and inner aspects of prefronto lachrymals.
,, 29*a* & 29*b*. Upper and under aspects of frontals.
,, 30*a* & 30*b*. ,, ,, ,, of parietals.
,, 31*a* & 31*b*. Views of the exoccipital and cauditory capsule.
Fig. 31*c*. Vertical section of auditory capsule showing rudiments of semicircular canals.
,, 32. Orbitosphenoid.
,, 33. Parasphenoid.
,, 34. Palato-vomer.
,, 35. Tempero-mastoid and quadrate.
,, 36. Pterygoid.
,, 37. Maxillary.
,, 38. ,,
,, 39. Lower jaw.
,, 40. Hyoid arch.
,, 41. Scapula.
Figs. 42 & 42*a*. Humerus.
Fig. 43. Radius, ulna and manus.
,, 44. Pelvis.
Figs. 45, 45*a* & 45*b*. Femur.
Fig. 46. Tibia, fibula and pes.

PLATE LXXVIII.

Fig. 1. *Ophites fasciatus*, Anderson.
,, 2. *Rana yunnanensis*, Anderson.

Fig. 3. *Polypedates yunnanensis*, Anderson.
,, 4. *Hylorana margariana*, Anderson.
,, 5. *Ixalus lateralis*, Anderson.
,, 6. *Ixalus kakhienensis*, Anderson.
,, 7. *Ixalus tuberculatus*, Anderson.

PLATE LXXIX.

Fig. 1. *Barbus margarianus*, Anderson.
,, 2. *Danio kakhienensis*, Anderson.
,, 3. *Rita sacerdotum*, Anderson. The drawing of this fish is not good, as it was taken from a stuffed specimen. The description in the text is from the newly-caught animal.

PLATE LXXX.

Fig. 1. *Paludina heliciformis.*
,, 2. *Paludomus burmanica*, Nevill.
,, 3. *Glessula subfusiformis*, Blanford.
,, 4. *Bithynia turrita*, Blanford.
,, 4*a*. ,, ,, ,,
,, 5. *Margarya melanioides*, Nevill (*Paludina margariana*, Nevill).
,, 6. *Helicarion resplendens*, Nevill.
,, 6*a*. ,, ,, ,,
,, 7. *Trochomorpha percompressa*, Blanford.
,, 8. *Unio foliaceus*, Gould, var. *fragilis*, Nevill.
,, 9. *U. andersonianus*, Nevill.
,, 9*a*. ,, ,,
,, 10. *U. bonneaudi*, E. & S. var.
,, 10*a*. ,,
,, 11. *U. feddeni*, Theobald.
,, 12. *U. bonneaudi*, E. & S. var.
,, 12*a*. ,,

PLATE LXXXI.

Fig. 1. *Æmona lena*, Atkinson.
,, 2. *Plesioneura liliana*, Atkinson.
,, 3. *Zophoessa andersoni*, Atkinson.
,, 4. *Syntomis andersoni*, Moore.
,, 5. *Syntomis atkinsoni*, Moore.

Fig. 6. *Syntomis fytchei*, Moore.
,, 7. *Syntomis grotei*, Moore.
,, 8. *Syntomis sladeni*, Moore.
,, 9. *Vespa bellona*, Smith.
,, 10. *Apis laboriosa*, Smith.
,, 11. *Bombus impetuosus*, Smith.

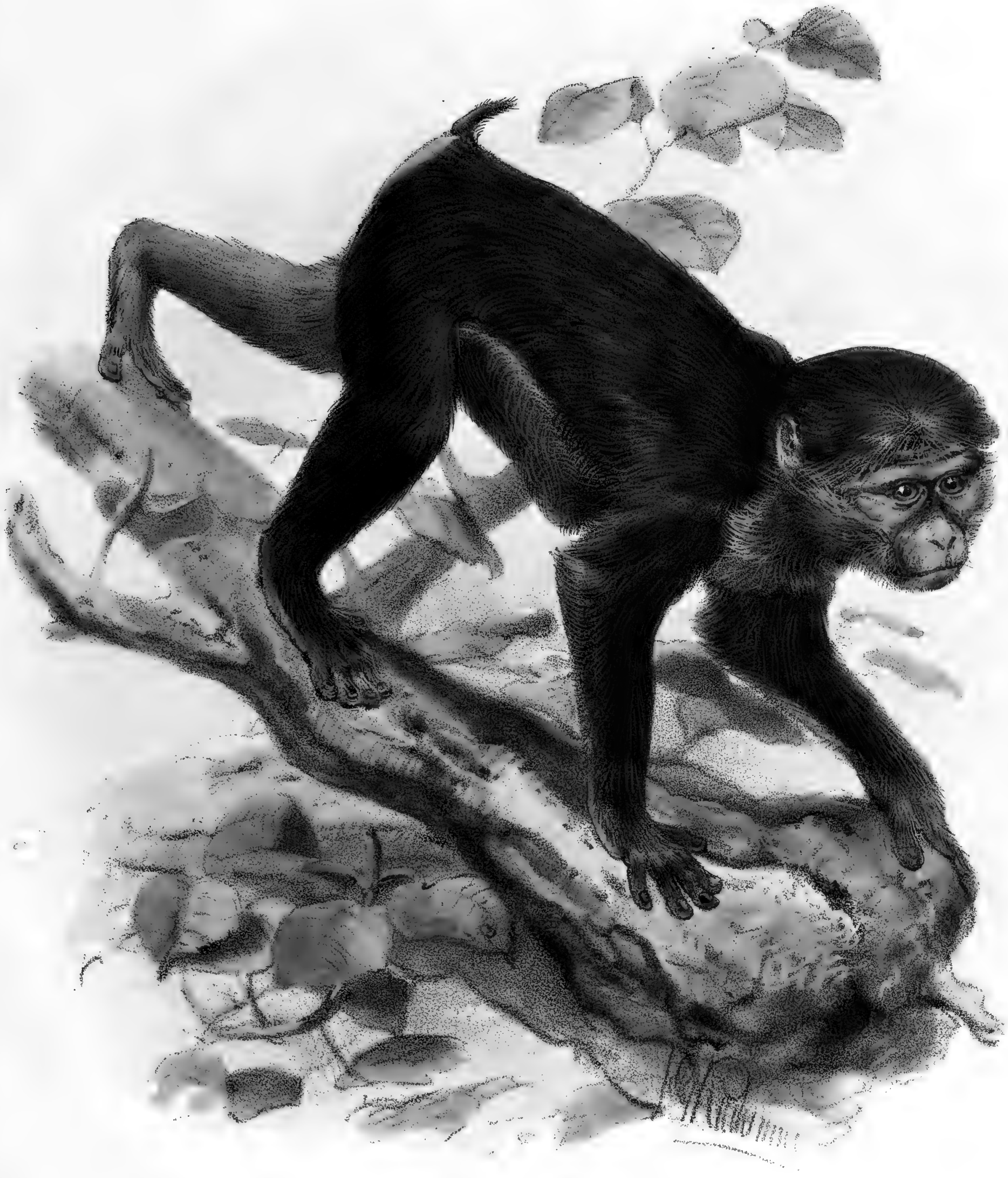
MAMMALS.

YUNNAN EXPEDITIONS, PLATE I.

J.G.Keulemans lith.

M.&N.Hanhart imp.

MACACUS ARCTOIDES, IS GEOFF. S^{t} HIL.

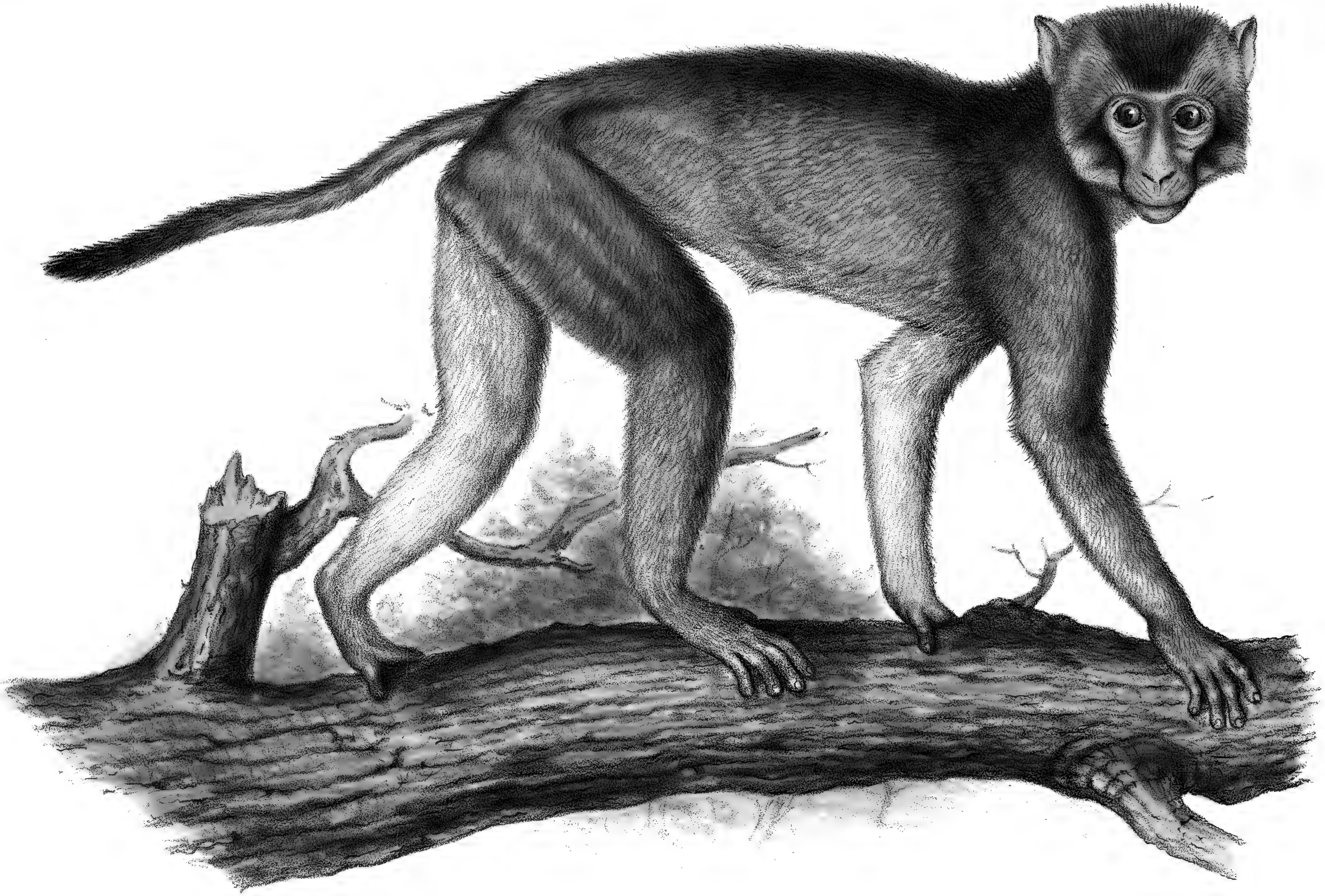


J. G. Keulemans lith.

MACACUS ARCTOIDES, IS. GEOFF. ST. HIL.

♀ YOUNG = M. BRUNNEUS, ANDR.

Banks & Co., Edinr.



Berjeau. Lith. [illegible] & C. Imp.

MACACUS RHESUS, DESM. VAR. ♀.

Fig. 7

Fig. 1

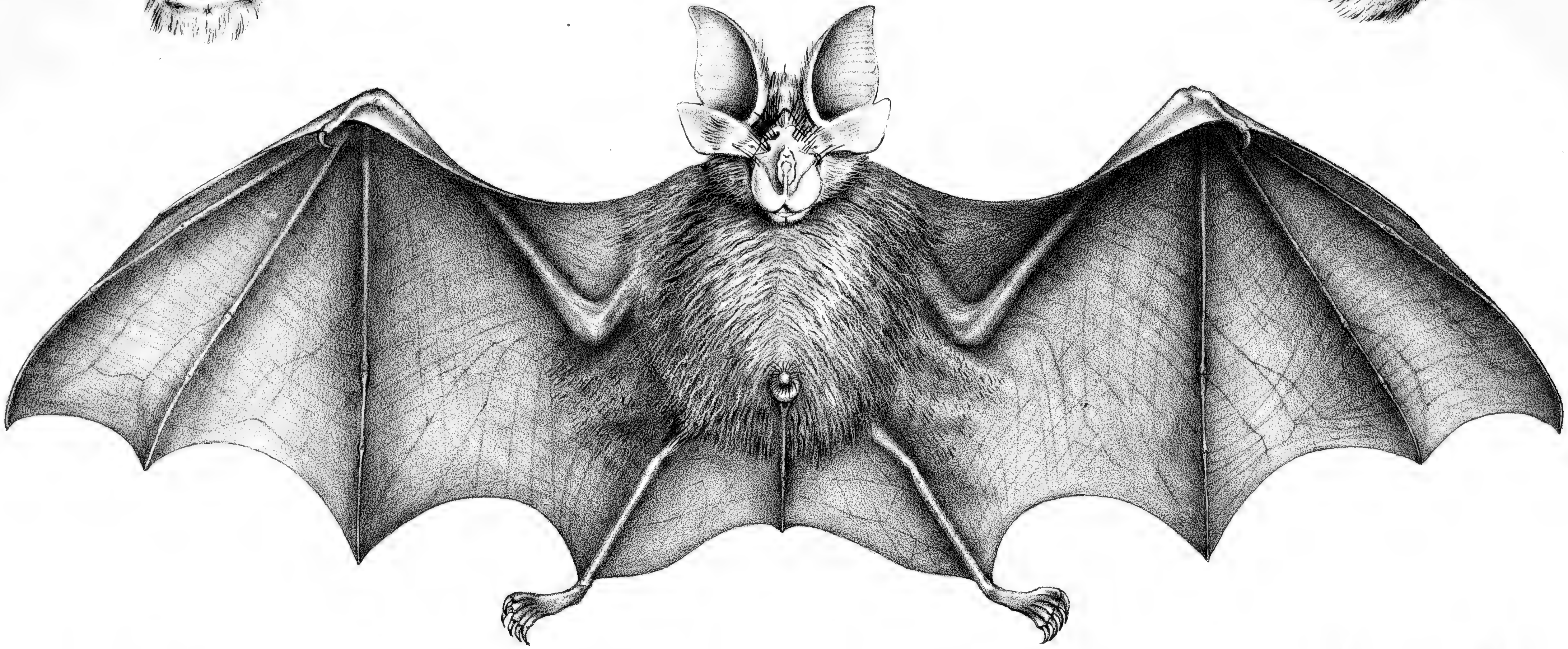


Fig. 8

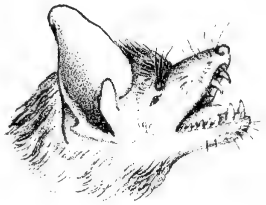


Fig. 2

Fig. 6

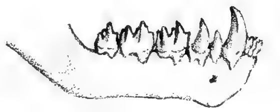


Fig. 4

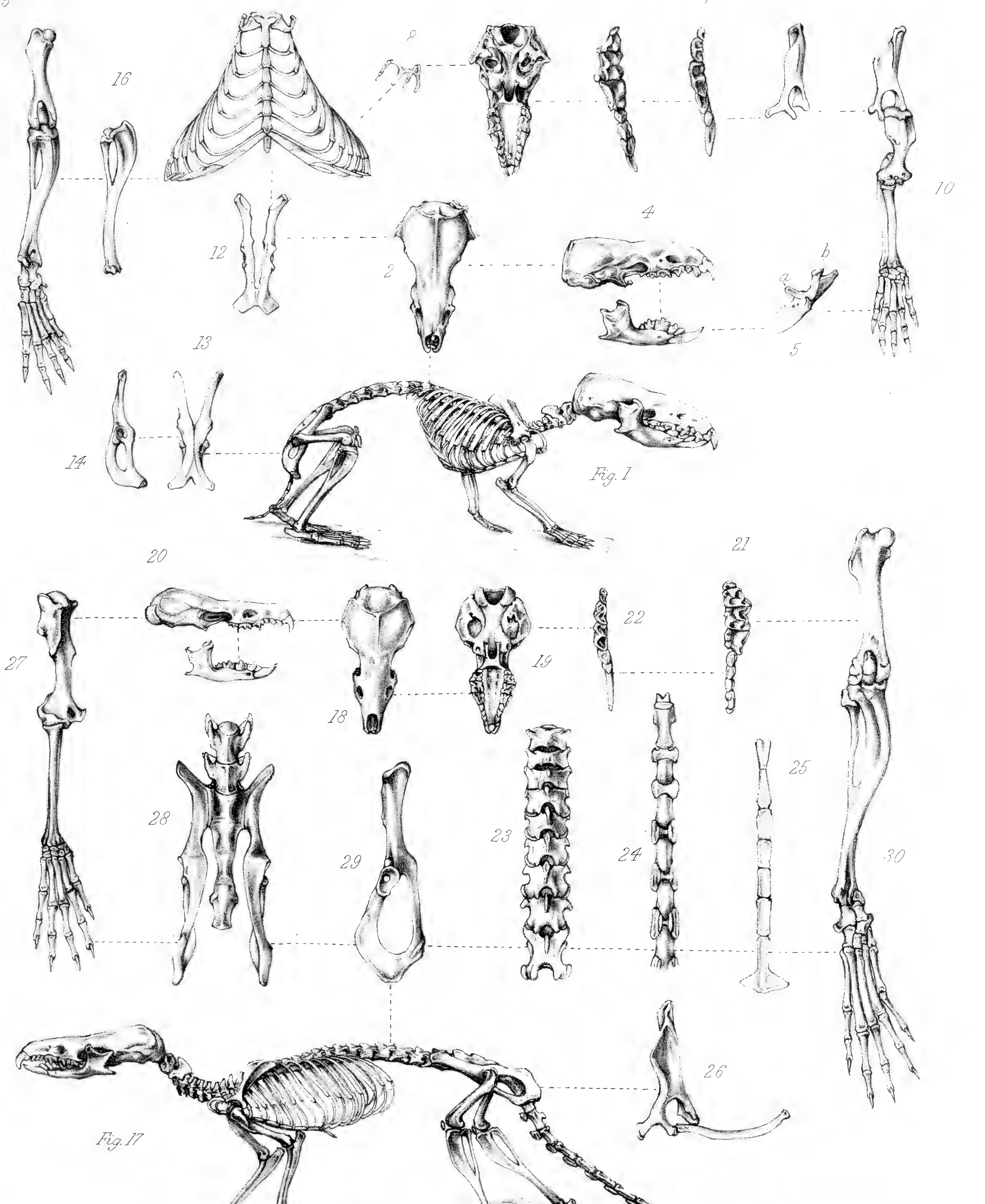
Fig. 5

Fig. 3

C. Berjeau, Lith.

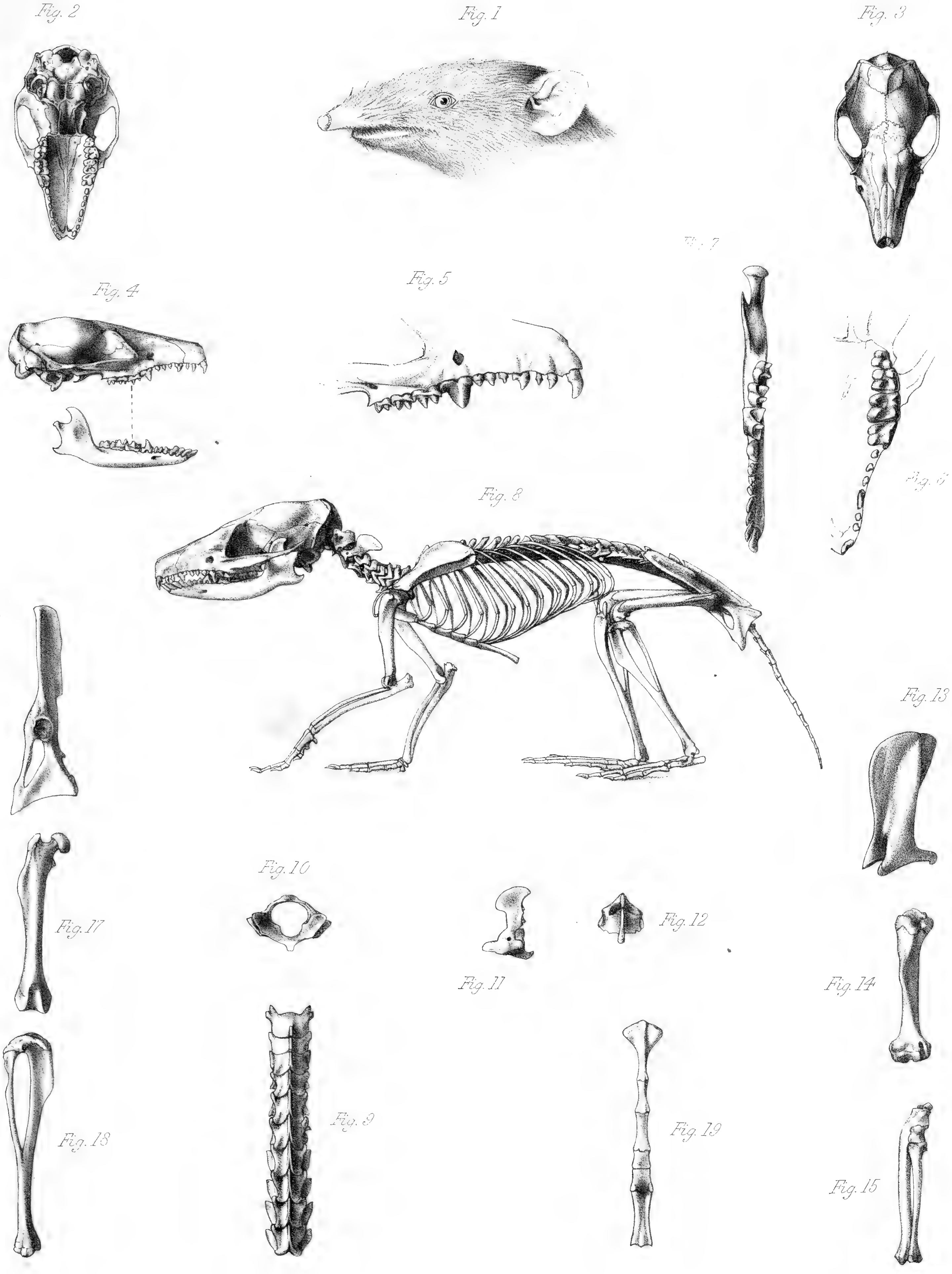
1. RHINOLOPHUS PEARSONII, HORSFIELD.
2-6. VESPERUGO ANDERSONI, DOBSON, 7-8. VESPERUGO AFFINIS, DOBSON,

Banks & Co. Edinʳ



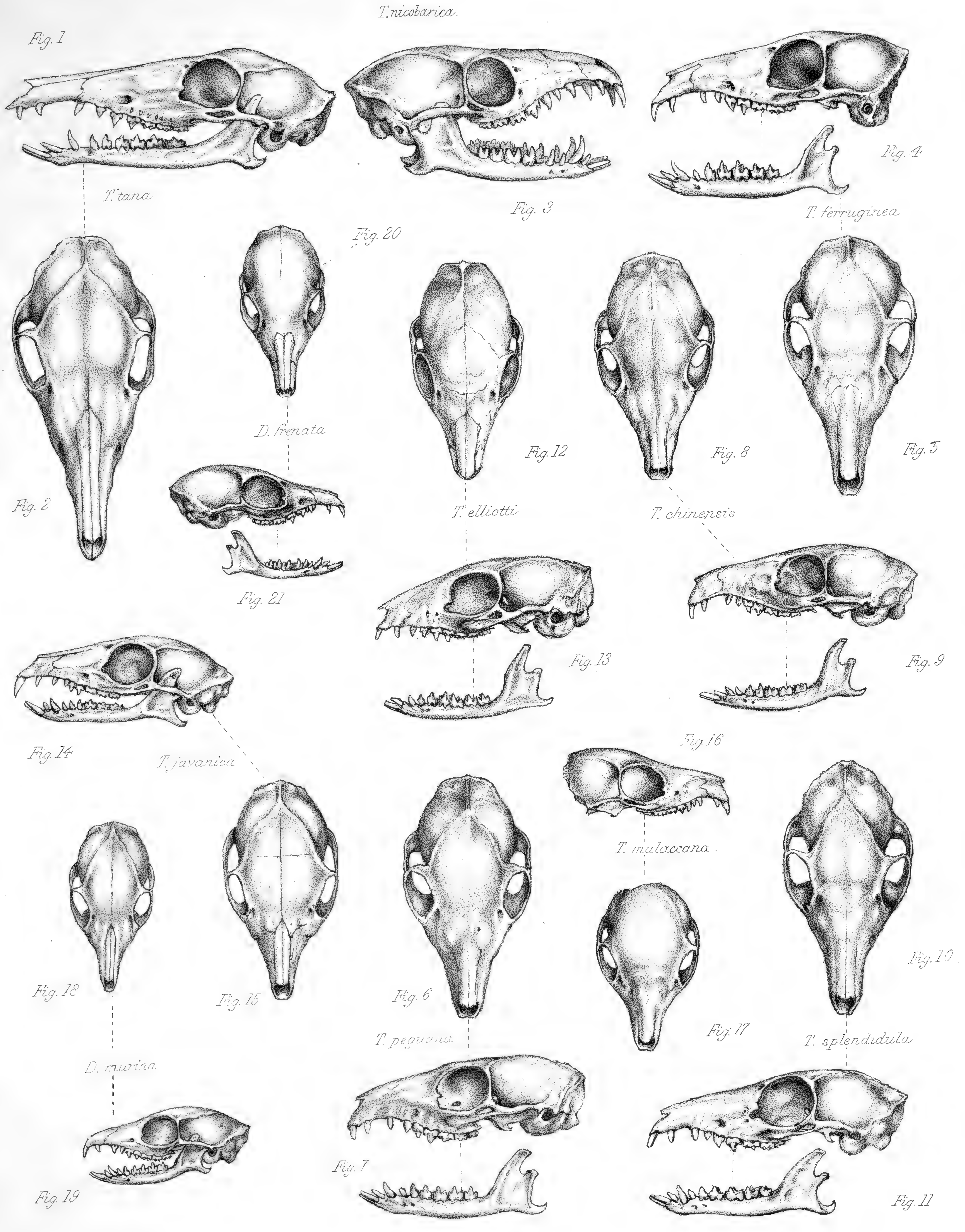
1-16 ANUROSOREX ASSAMENSIS, ANDR.
17-30 CHIMARROGALE HIMALAICUS, GRAY.

Banks & Co., Edinr.



Ford & Griesbach lith^s
Banks & Co., Edin^r

HYLOMYS PEGUENSIS.



C. Berjeau, Lith,

Banks & Co., Edinr

TUPAIA AND DENDROGALE

Fig. 1

H. fuscus

Fig. 7

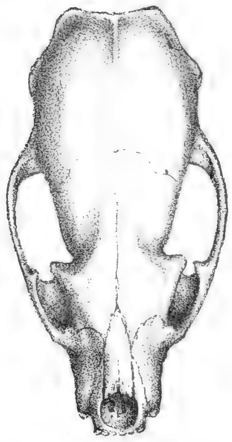
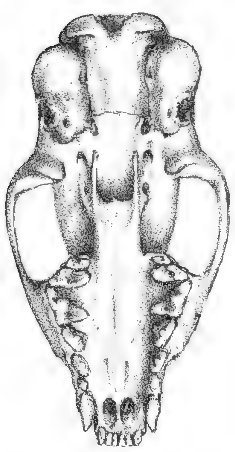
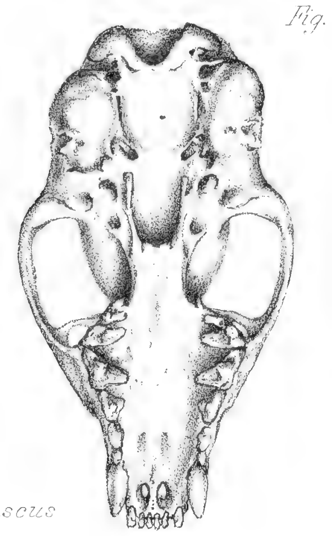


Fig. 8



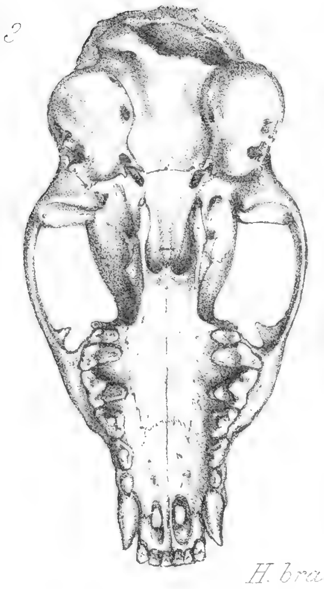
H. jerdoni

Fig. 2



H. fuscus

Fig. 3



H. brachyurus

Fig. 9

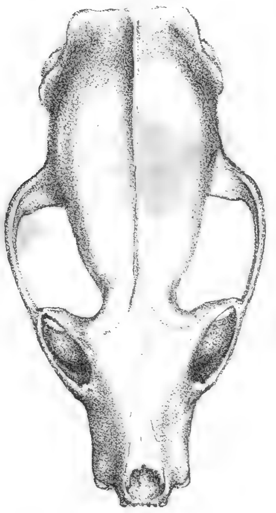
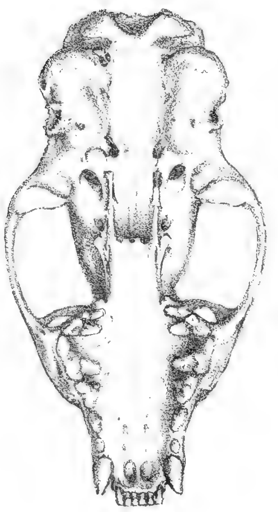
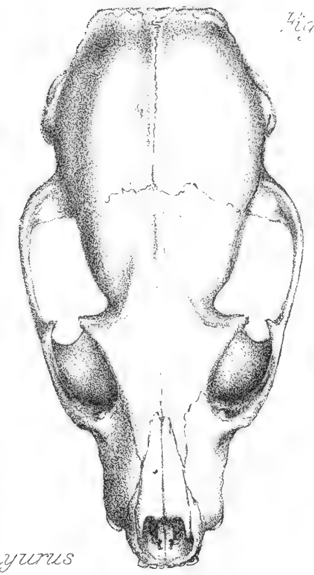


Fig. 10



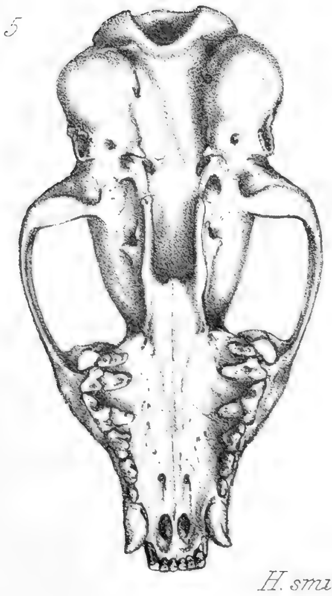
H. griseus

Fig. 4



H. brachyurus

Fig. 5



H. smithii

Fig. 11

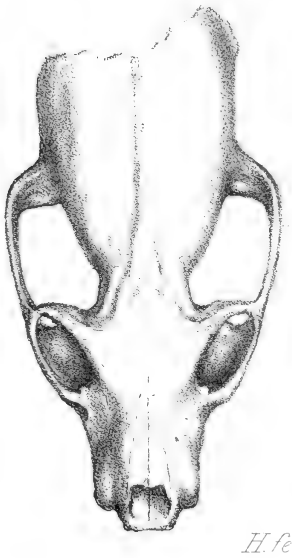
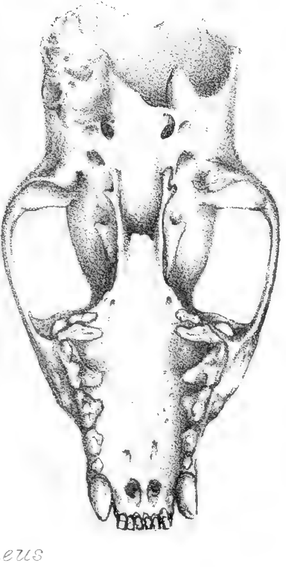
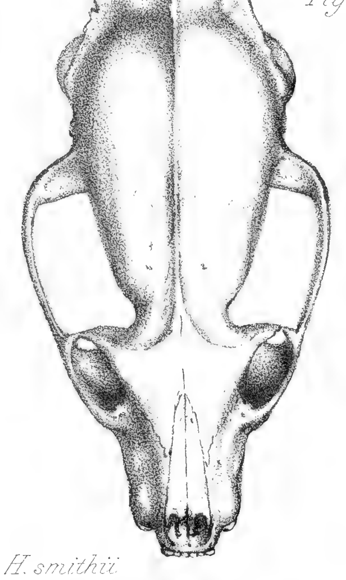


Fig. 12



H. ferrugineus

Fig. 6



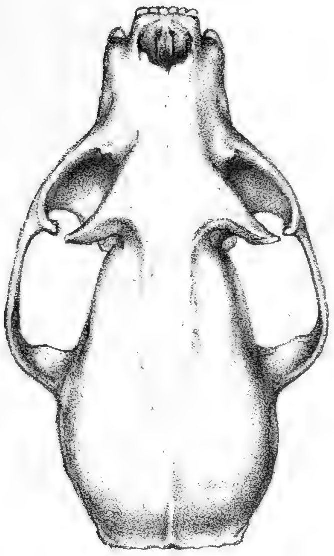
H. smithii

C. Berjeau, Lith,

Banks & Co., Edinr.

HERPESTES. ¾ Nat. Size.

Fig. 1 H. semitorquatus



H. semitorquatus Fig. 2

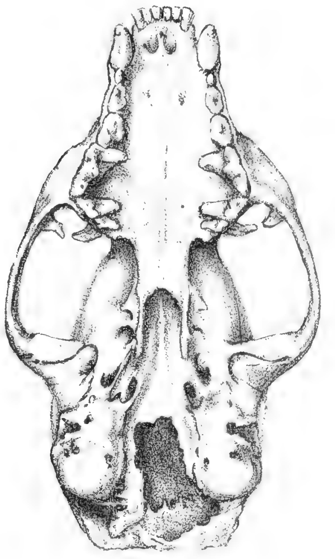


Fig. 7

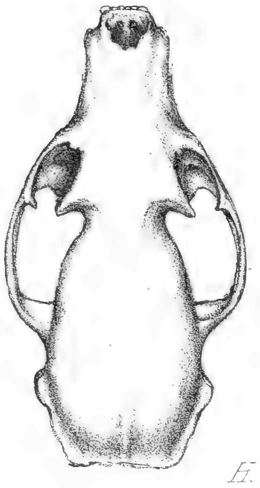
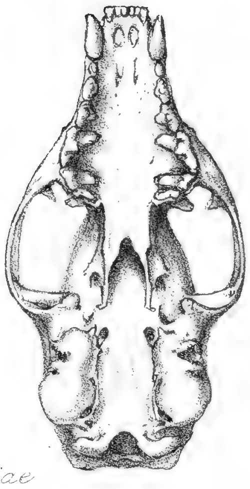


Fig. 8



H. maccarthiae

Fig. 3

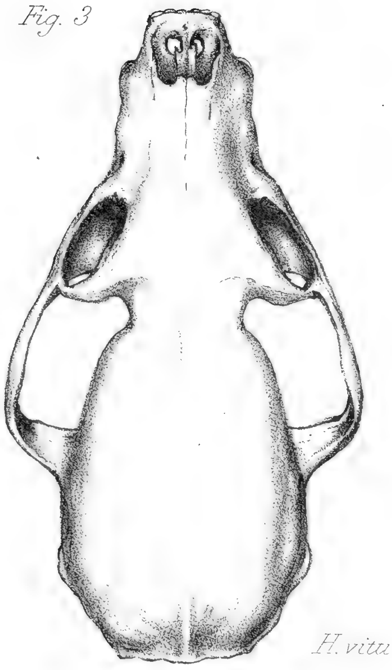
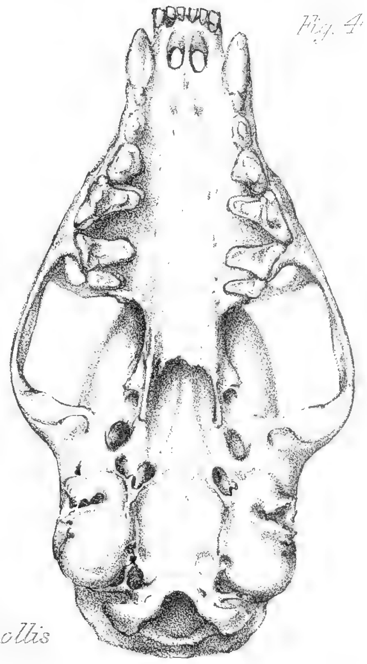


Fig. 4



H. vitticollis

H. vitticollis

Fig. 10

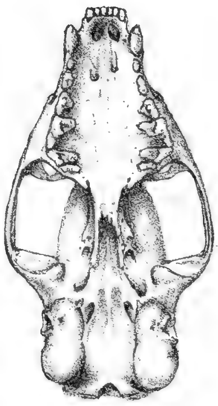
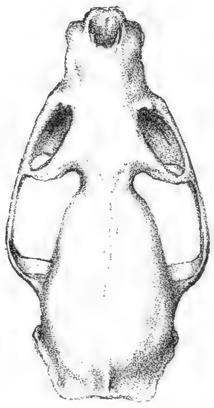


Fig. 9



H. persicus

Fig. 5

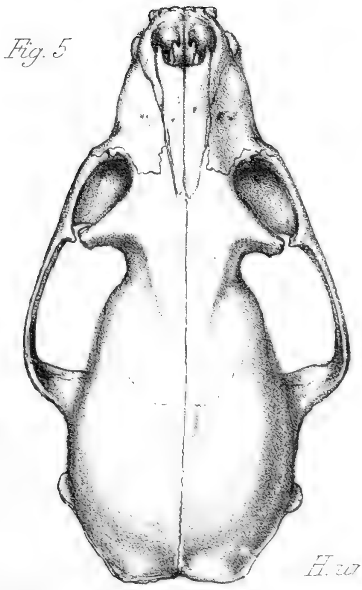


Fig. 11

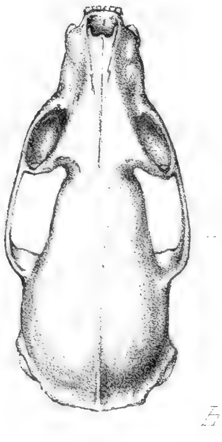
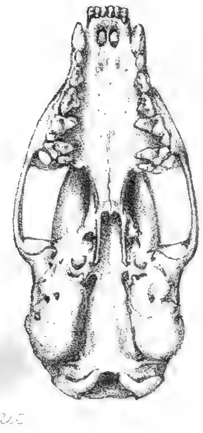
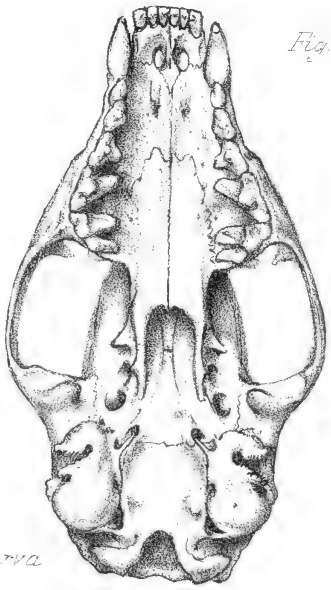


Fig. 12



H. auropunctatus

Fig. 6



H. urva

H. urva

C. Berjeau, Lith.

Banks & Co., Edinr.

HERPESTES. ¾ Nat. Size.

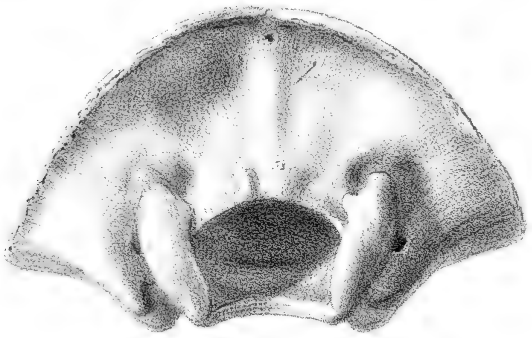
J. G. Keulemans lith

LUTRA SUMATRANA, GRAY.

[illegible]

Fig. 1.

Fig. 4.



Nat. Size.

Fig. 3.

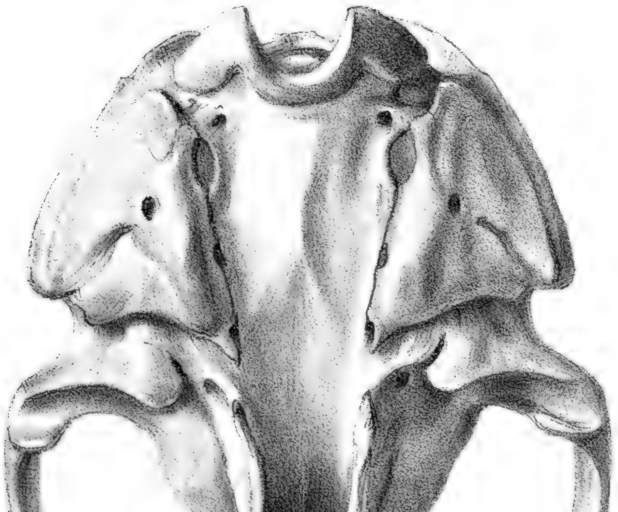
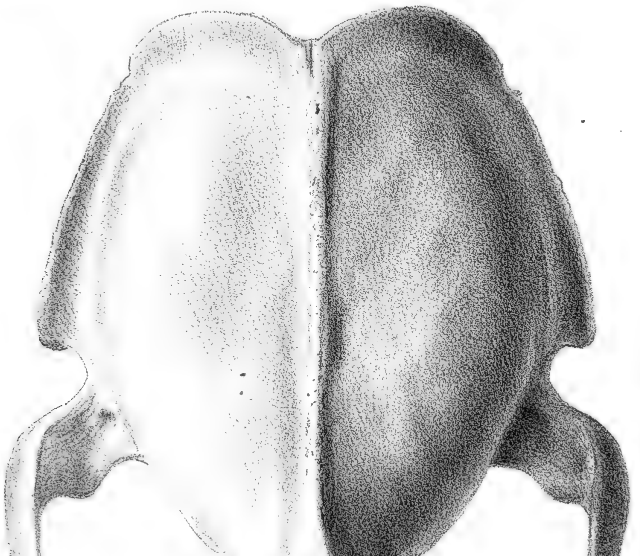


Fig. 2.



[illegible] LUTRA NAIR, F. CUVIER, (TYPE) ♂. Banks & Co., Edinʳ.

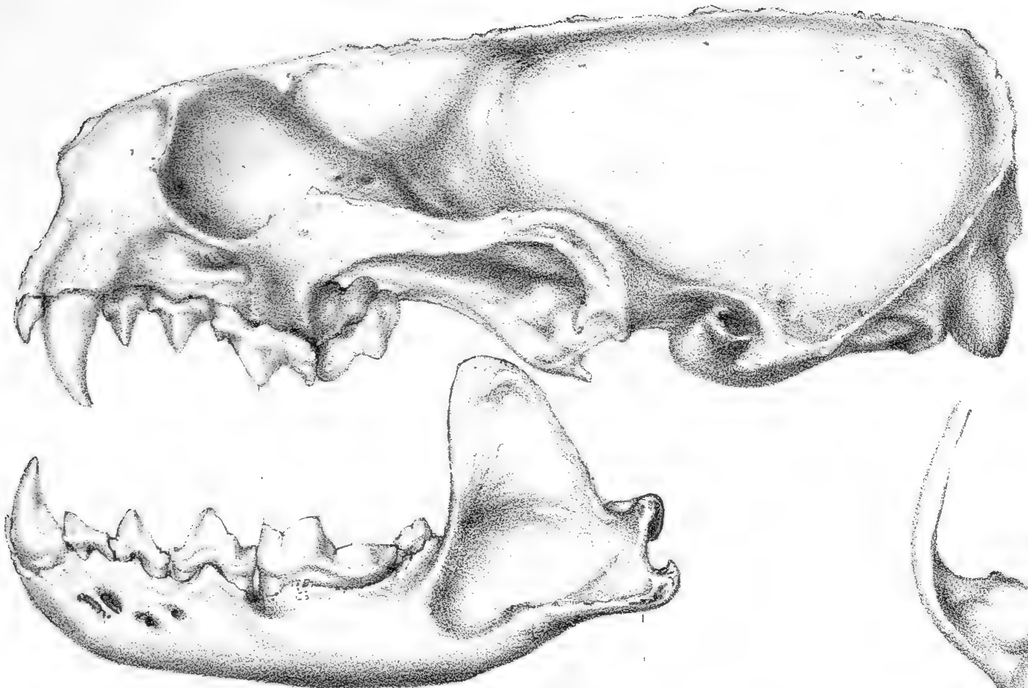
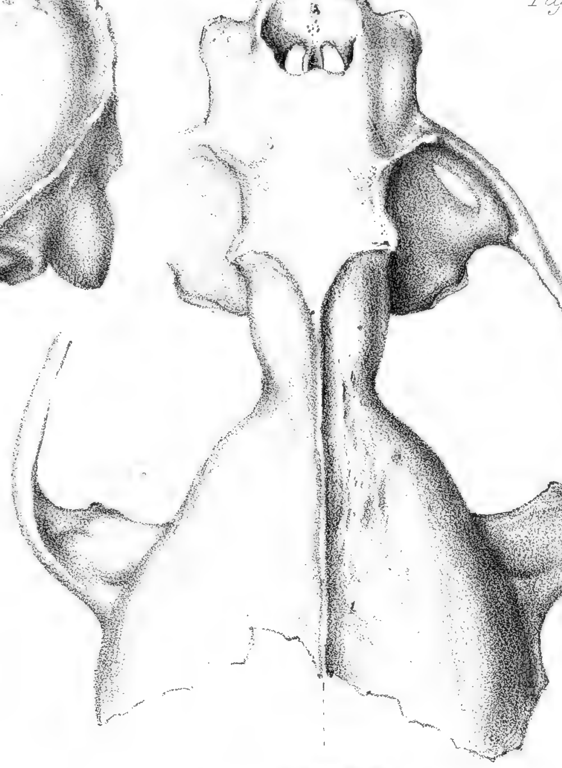


Fig. 1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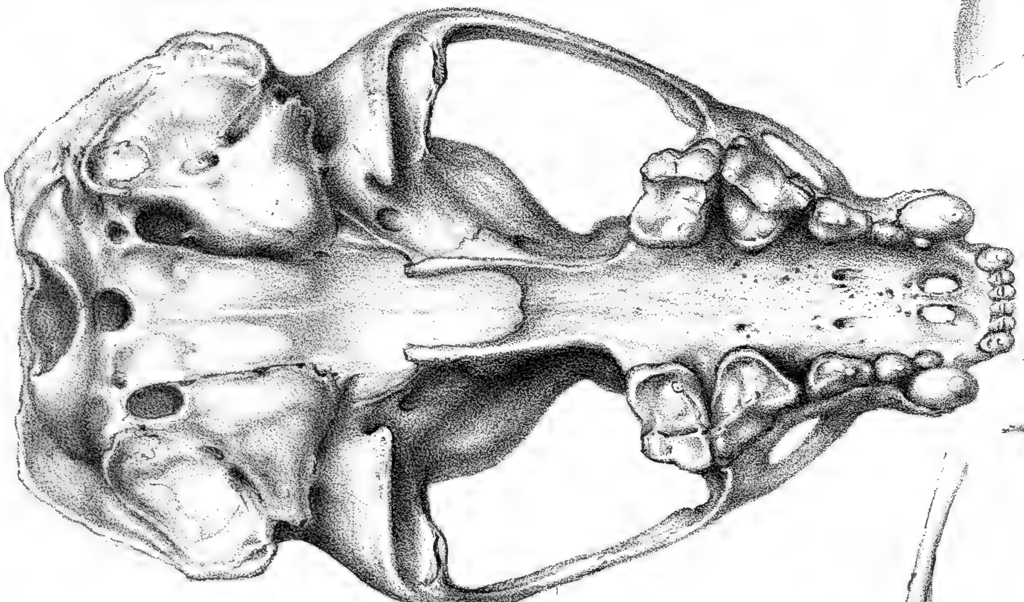
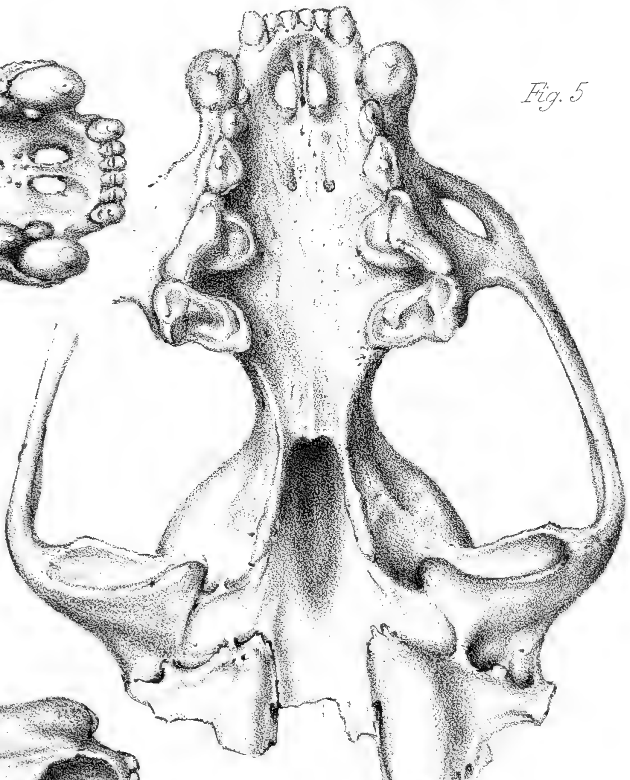


Fig. 2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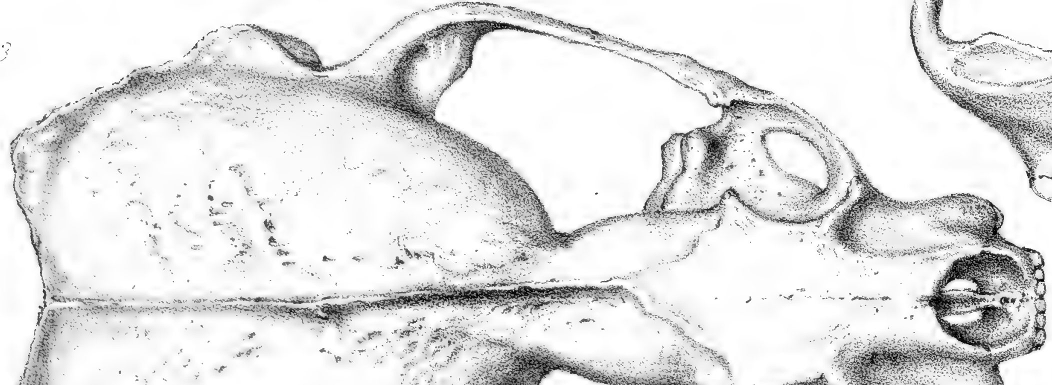
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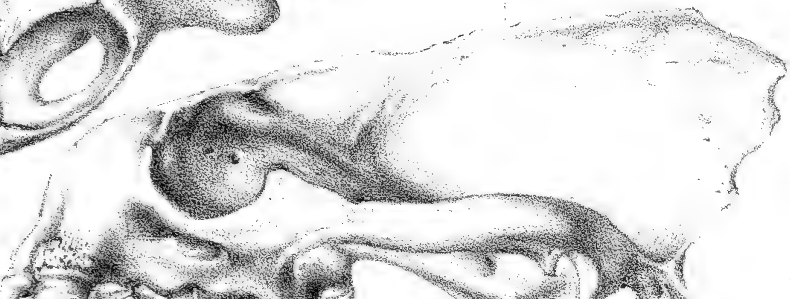


Fig.

L. monticola

L. sumatrana

C. Berjeau, Lith.

Banks & Co.

LUTRA.

J. G. Keulemans lith.

RHIZOMYS PRUINOSUS, BLYTH.

[illegible]

H. H. Godwin, Austen, Delt

Banks & Co. Edinr

RHIZOMYS ERYTHROGENYS, ♀ ANDR.

J. G. Keulemans lith

RHIZOMYS BADIUS, HODGSON.

Banks & Co. Edinr

J. G Keulemans lith

RHIZOMYS MINOR, GRAY.

Bauks & Co. Edinr

Fig. 5

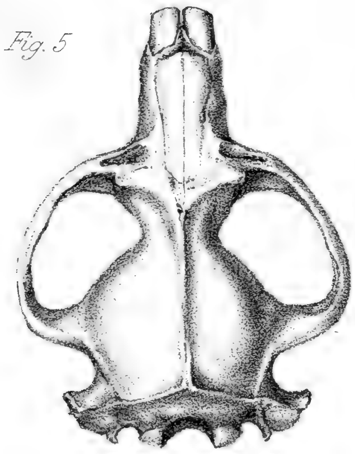


Fig. 4

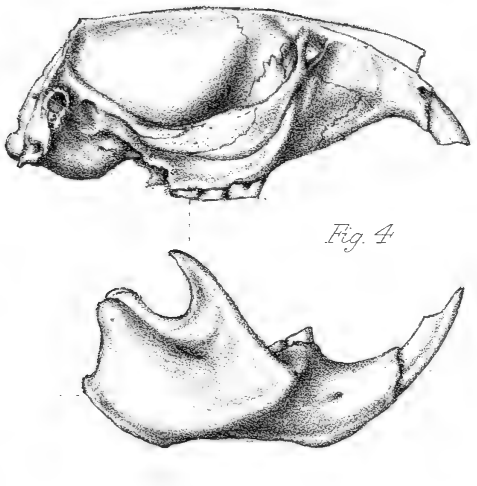


Fig. 6

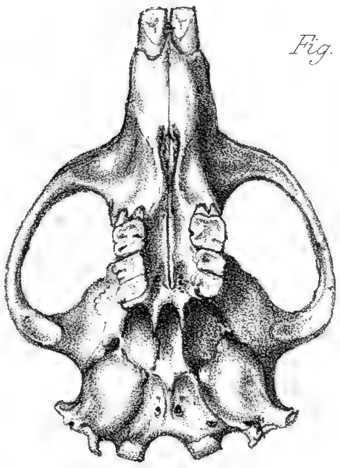


Fig. 8

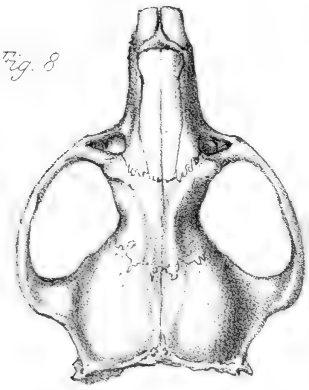


Fig. 1

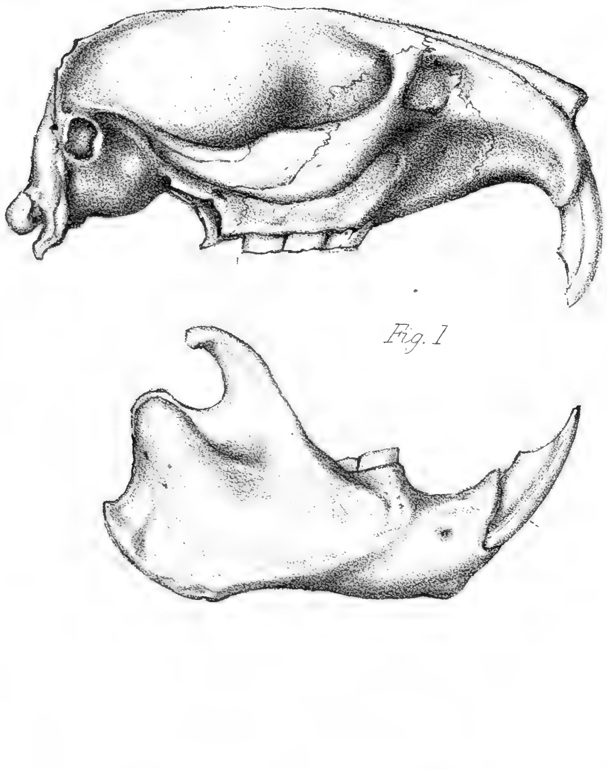


Fig. 9

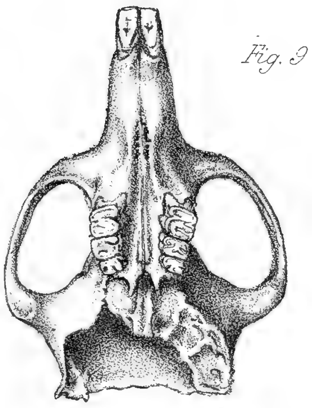


Fig. 2

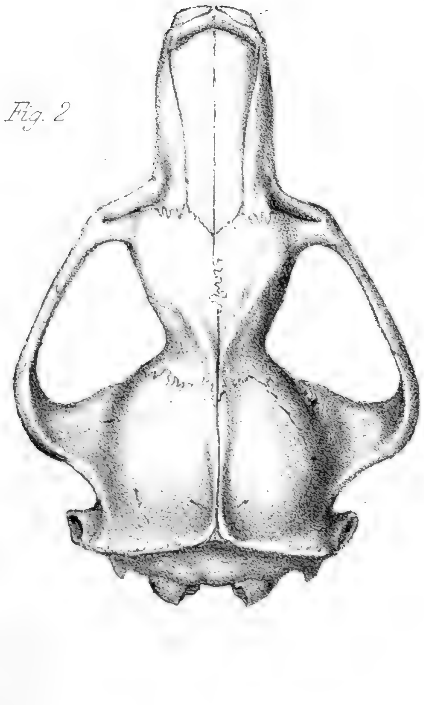


Fig. 7

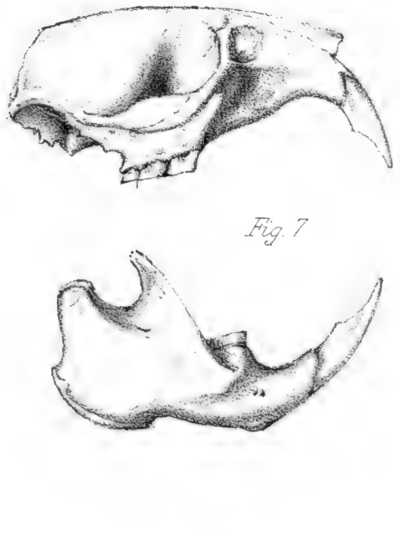
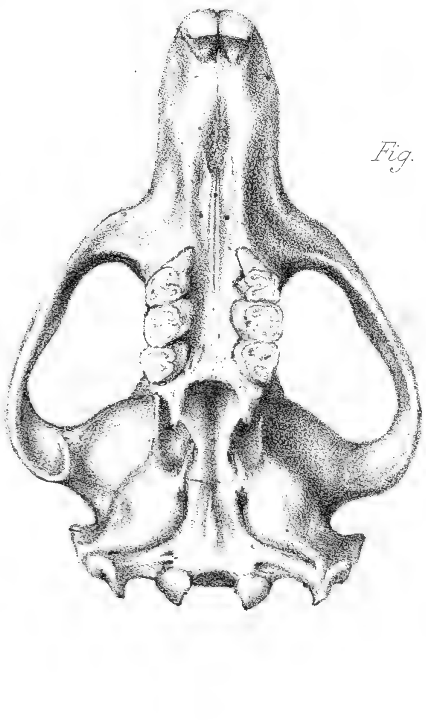


Fig. 3



C. Berjeau, Lith.

RHIZOMYS.

1-3. R. PRUINOSUS BLYTH. 4-6 R. BADIUS, HODG. 7-9 R. MINOR, GRAY.

Banks & Co., Edinr

MAMMALS.

YUNNAN EXPEDITIONS, PLATE XVII.

J. G. Keulemans lith.

MUS BOWERSI, ANDR.

[illegible]

J. G. Keulemans lith.

SCIURUS BLANDFORDI, BLYTH. ♂

Banks & Co. Edin.

MAMMALS.

YUNNAN EXPEDITIONS, PLATE XIX.

J. G. Keulemans lith.

SCIURUS GORDONI, ANDR.

Bale & Son. Imp.

J. G. Keulemans lith.

SCIURUS SLADENI, ANDR. ♂

Banks & Co. Edin.r

J. G. Keulemans lith.

SCIURUS ALSTONI, ANDR.

Banks & Co., Edinʳ.

J. G. Keulemans lith.

PTEROMYS YUNNANENSIS, ANDR. ♂ ¼ Nat. Size.

Banks & Co. Edinr.

C. Berjeau, Lith,

PTEROMYS (SCIUROPTERUS) PEARSONI, GRAY.

Banks & Co., Edinr.

Fig. 1

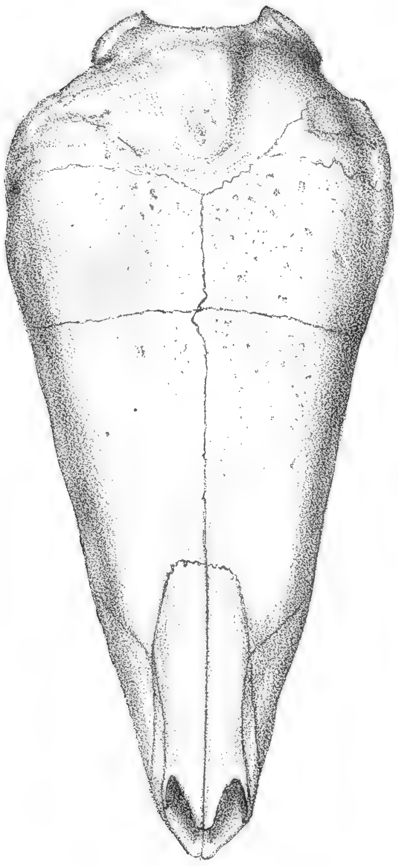


Fig. 3

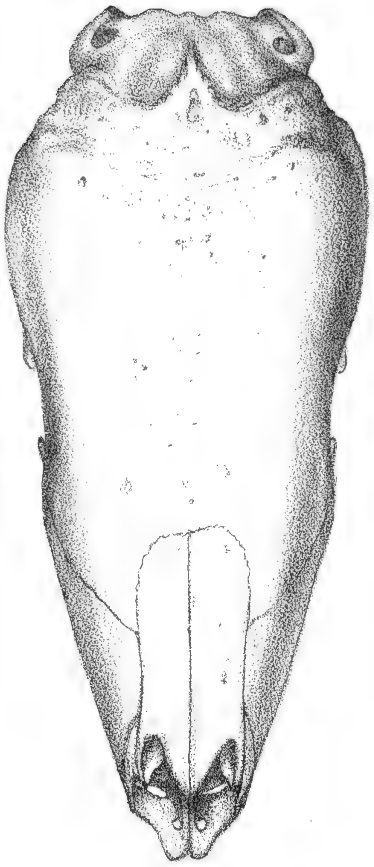


Fig. 7

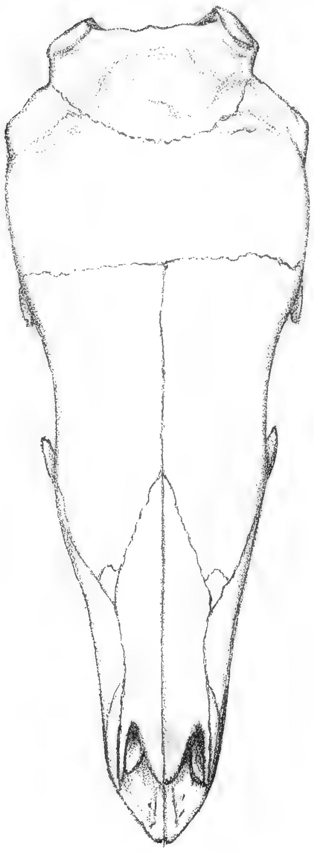
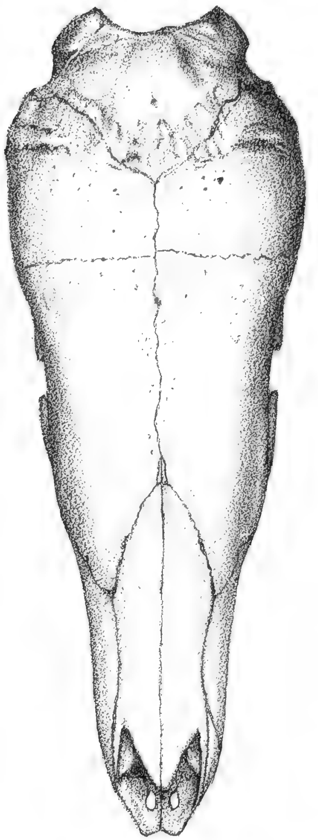


Fig. 5



M. pentadactyla L.

M. aurita Hodg.

(M. leptura Blyth) =

(M leucura Blyth) =

M. Javanica

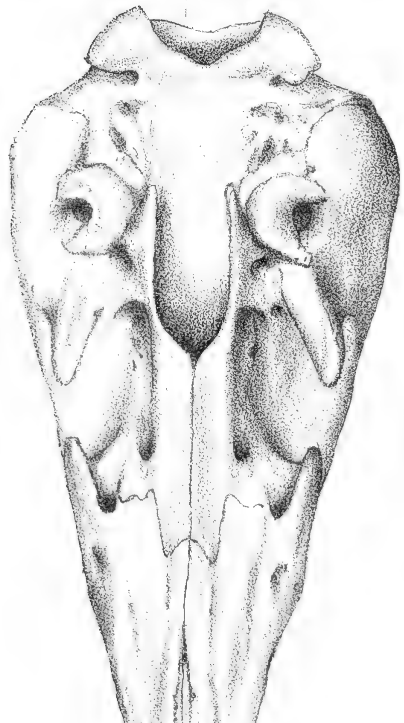


Fig. 2

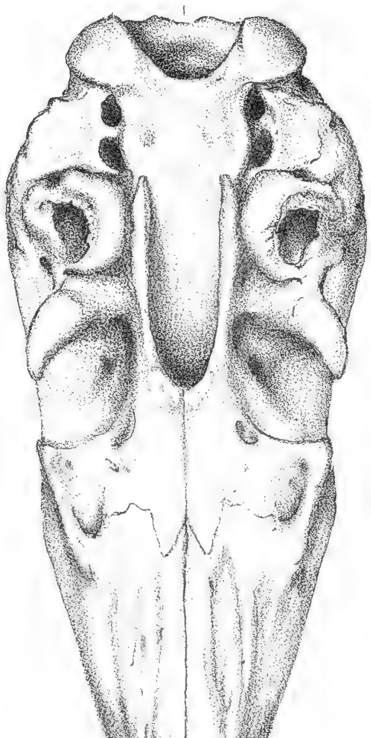


Fig. 4

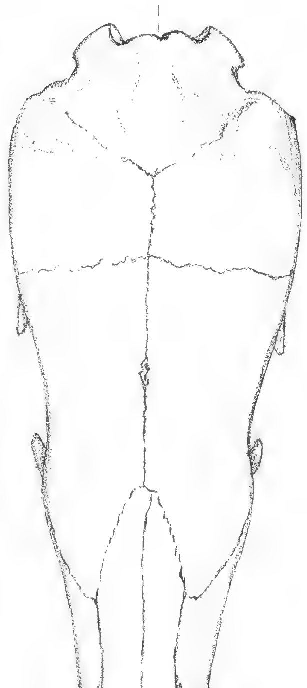


Fig. 8

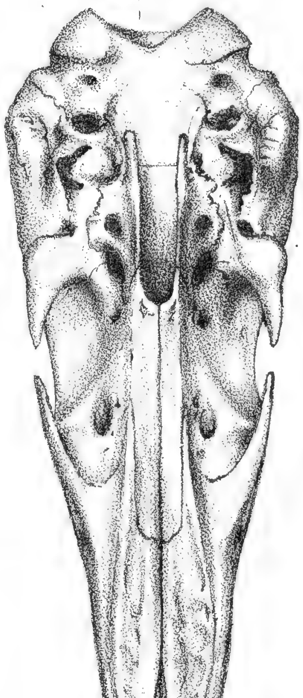


Fig. 6

[illegible]

MANIS *Nat. Size*

Banks & Co., Edinʳ

Fig. 1

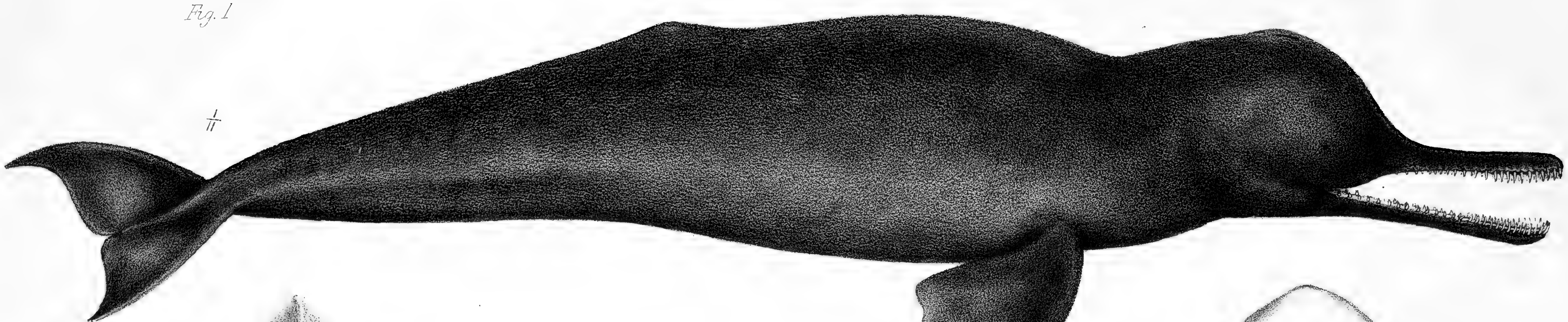


Fig. 2

Fig. 3

Fig. 5

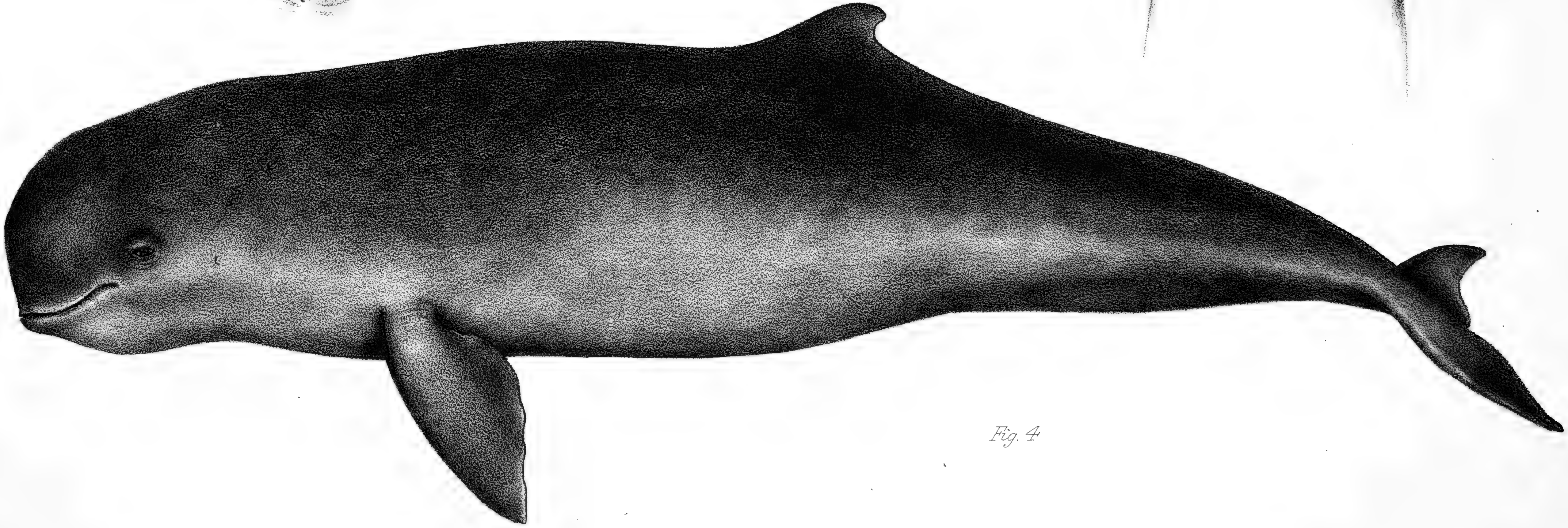


Fig. 4

C. Berjeau. Lith.

1-3 PLATANISTA GANGETICA., 4-5 ORCELLA BREVIROSTRIS.

Banks & Co. Edinr.

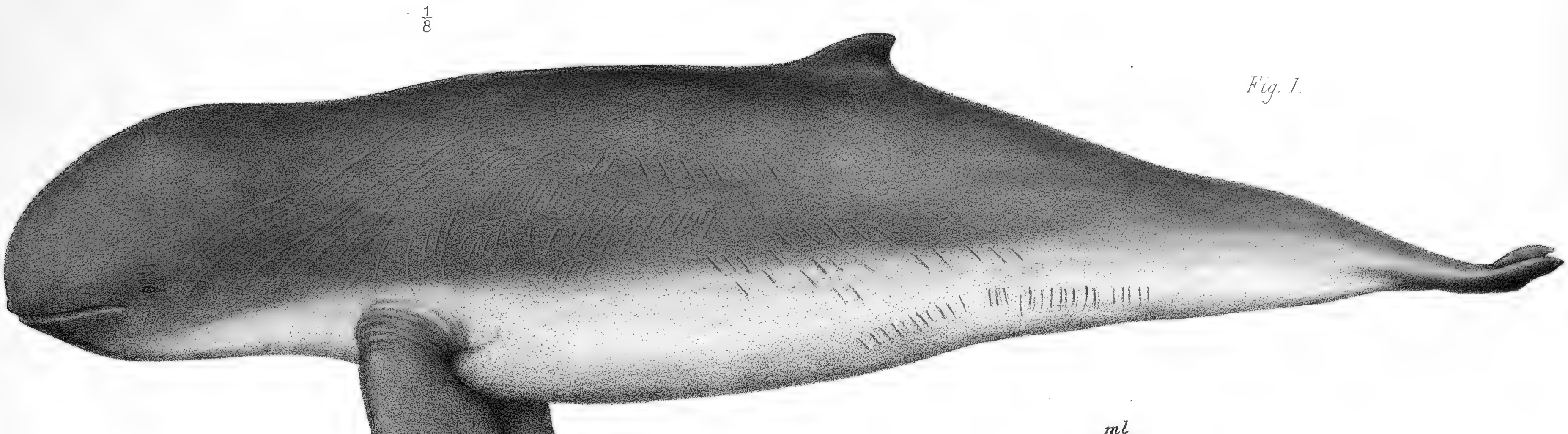


Fig. 1.

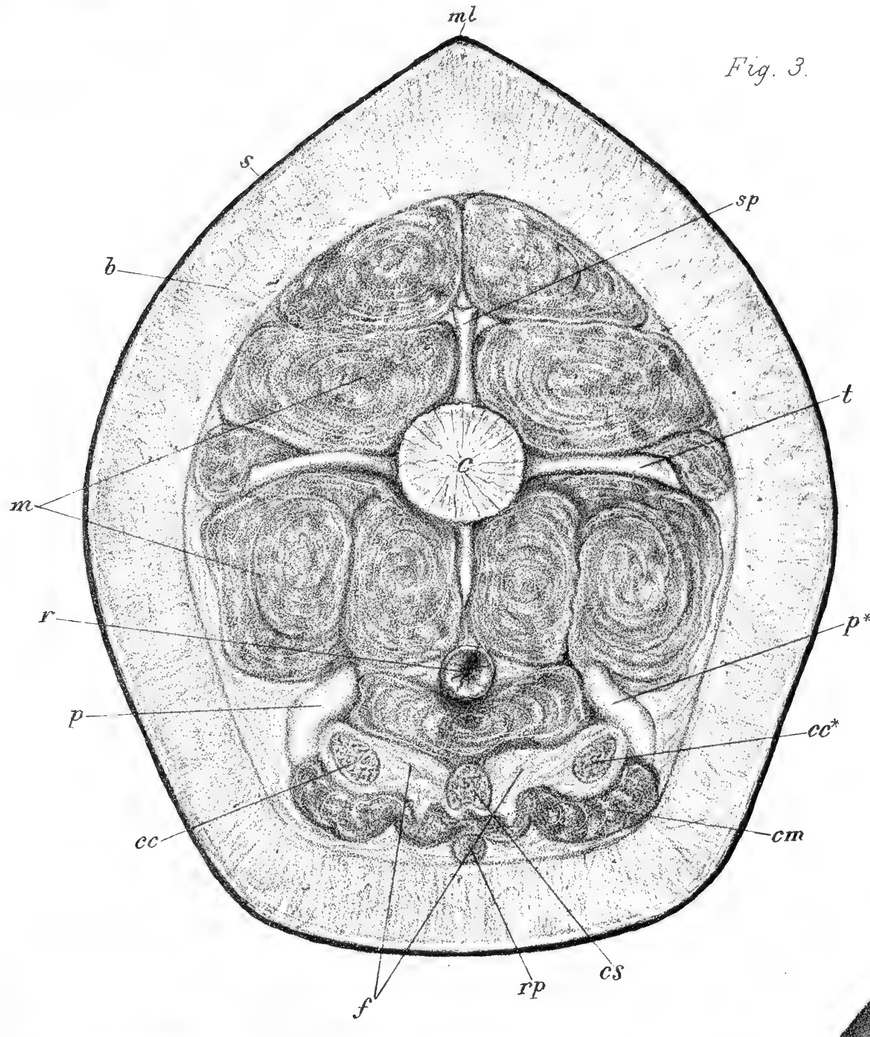


Fig. 3.

Fig. 4.

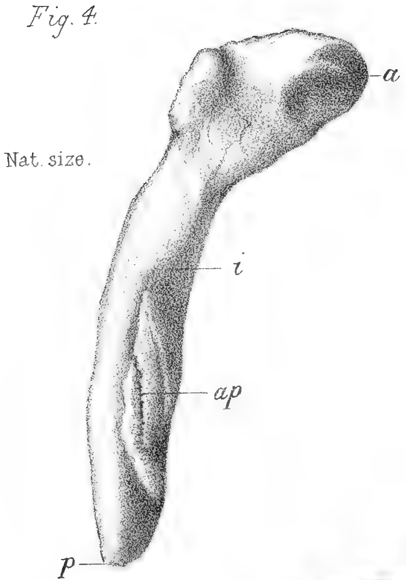
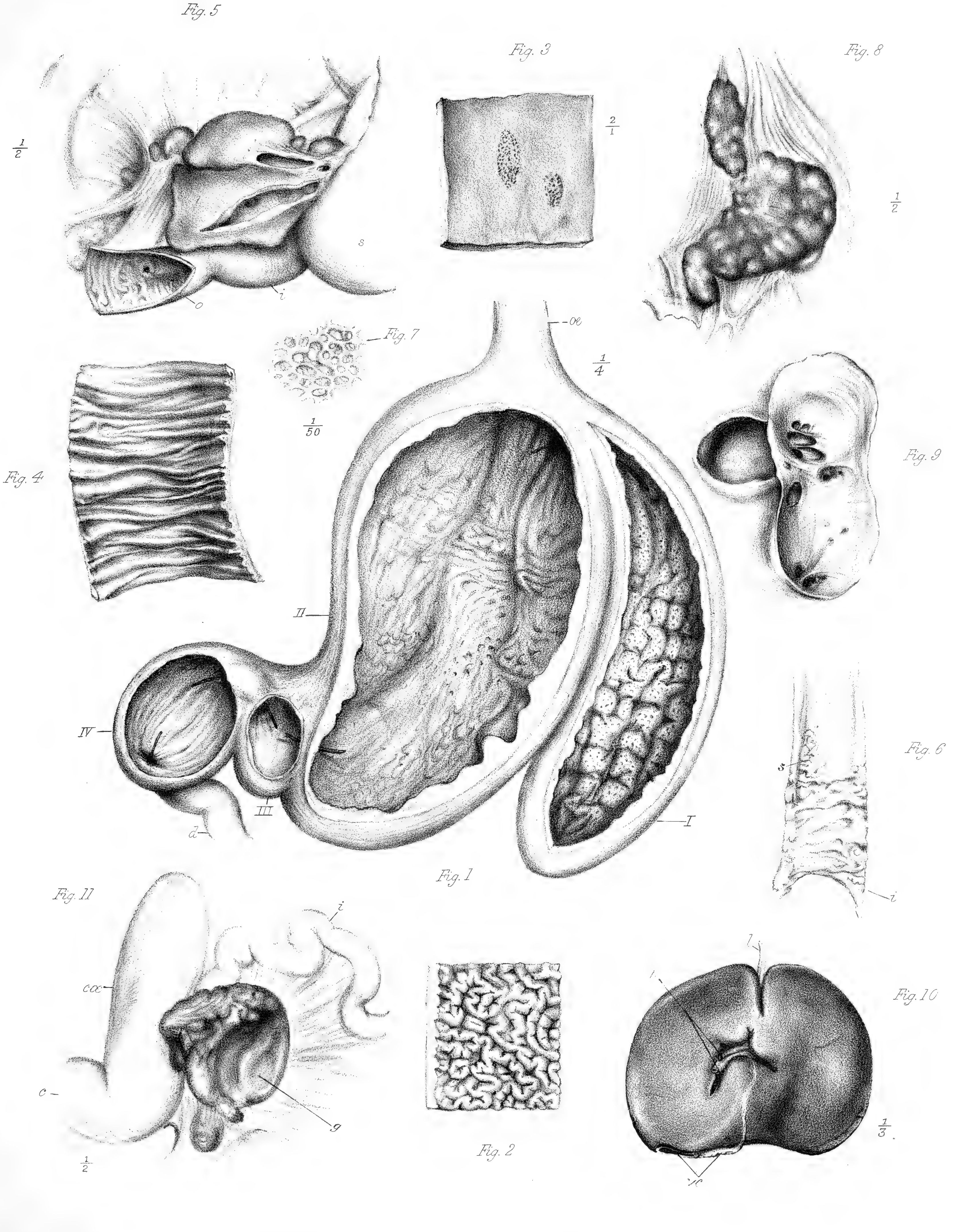


Fig. 2.

C. Berjeau lith.

ORCELLA FLUMINALIS, ANDR. ♂

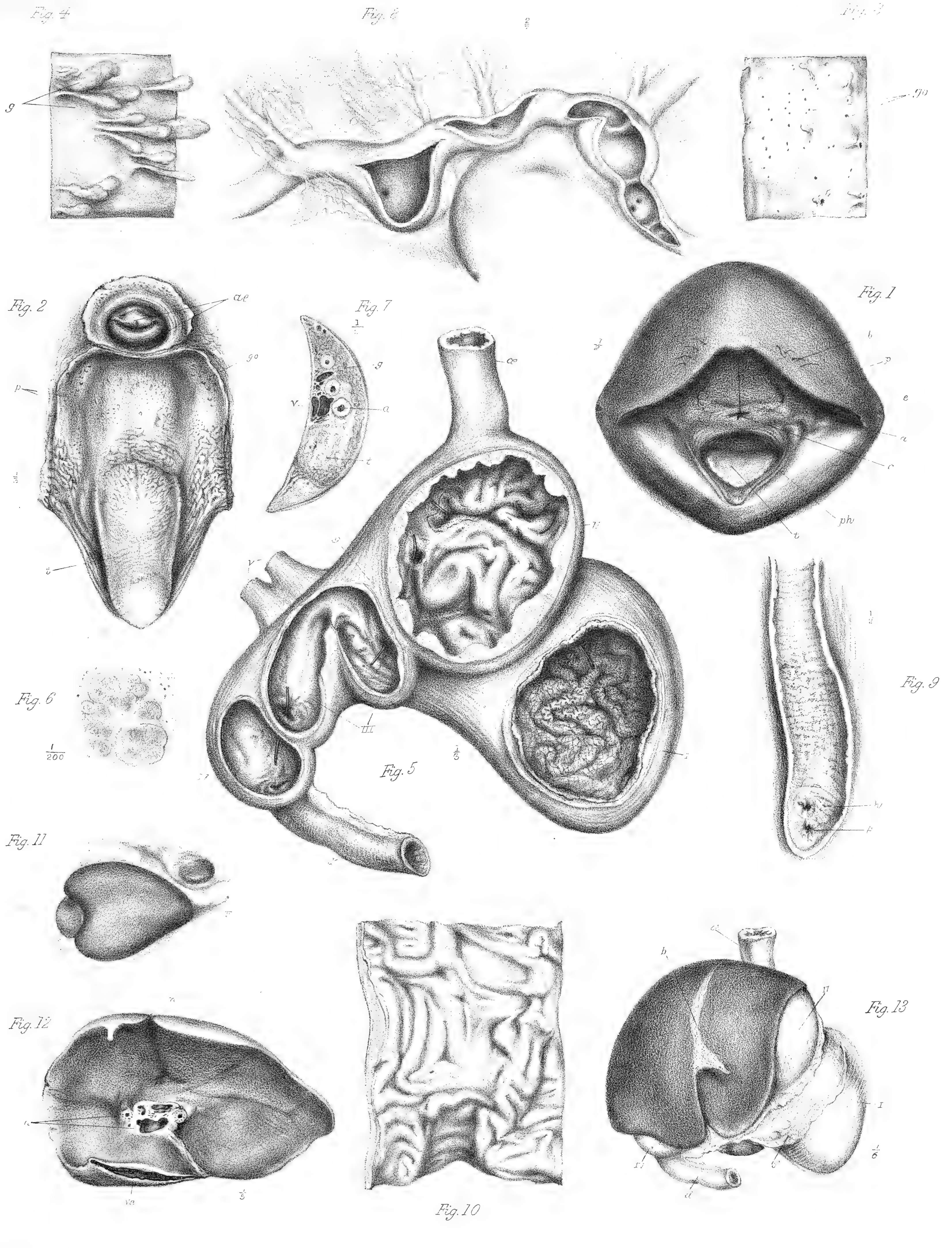
Hanhart imp.



C. Berjeau, Lith.

Banks & Co., Edinr

ALIMENTARY CANAL & GLANDS OF PLATANISTA GANGETICA.



ALIMENTARY CANAL & GLANDS OF ORCELLA BREVIROSTRIS.

Banks & Co., Edinr.

Fig. 1

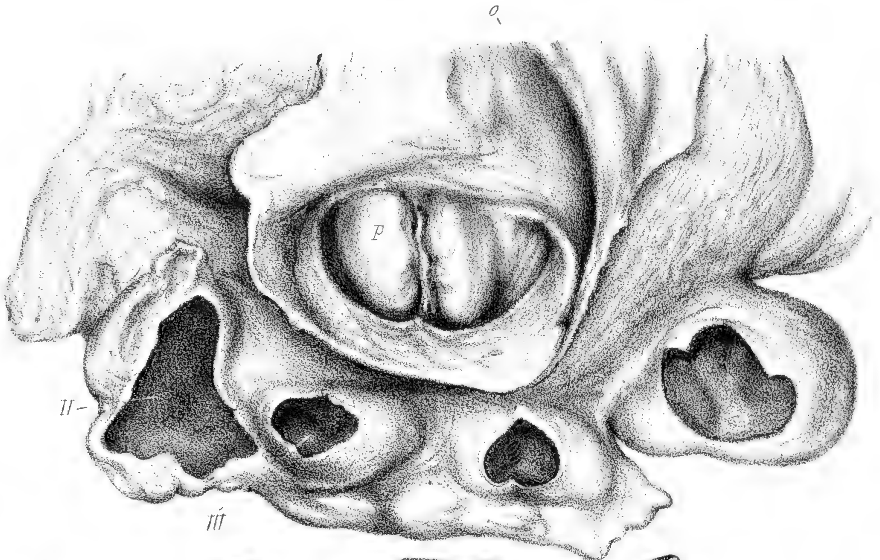


Fig. 8

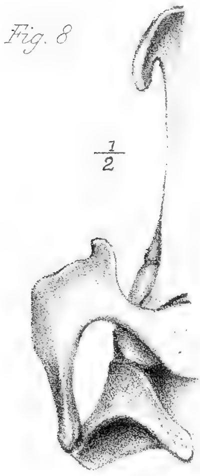


Fig. 9

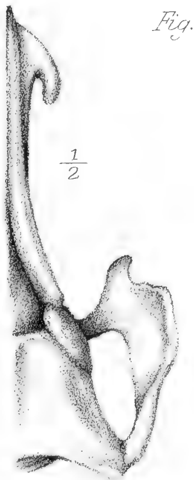


Fig. 3

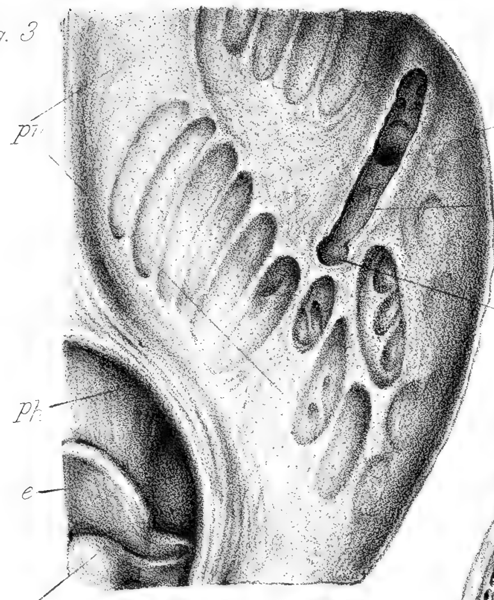


Fig. 2

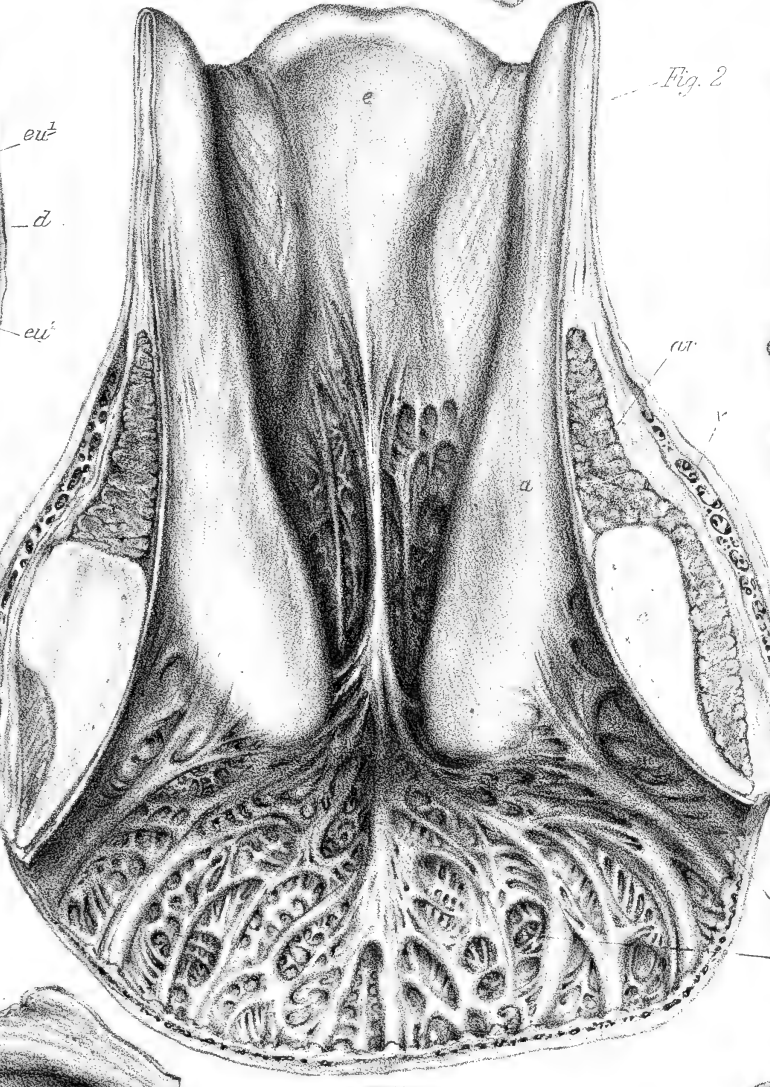


Fig. 4

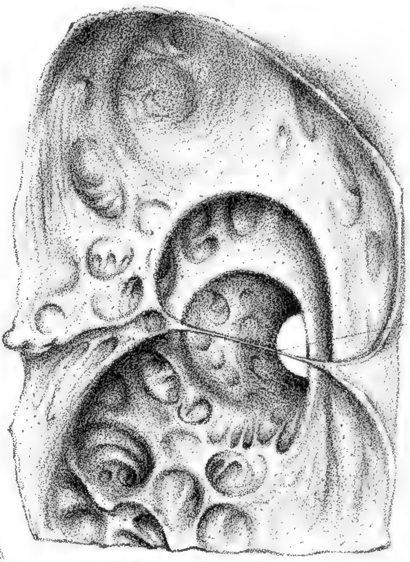


Fig. 6

Fig. 7

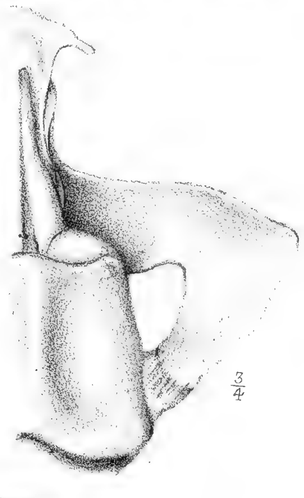
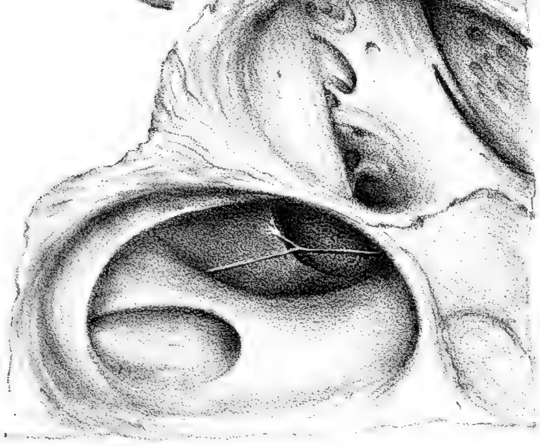


Fig. 5



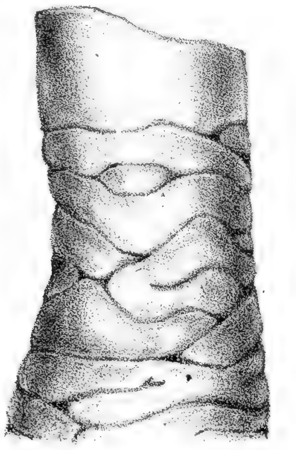
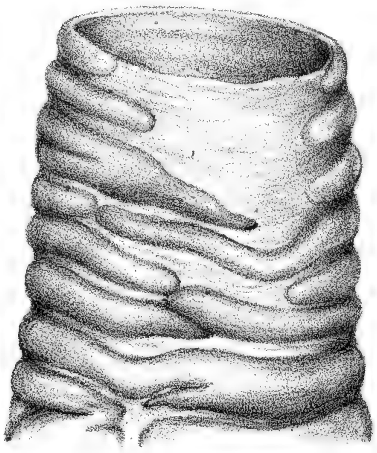


Fig. 10

Fig. 11



C. Berjeau, Lith.
Banks & Co., Edinʳ.

AIR-SACS, EUSTACHIAN TUBE, HYOID AND TRACHEA
OF PLATANISTA AND ORCELLA.

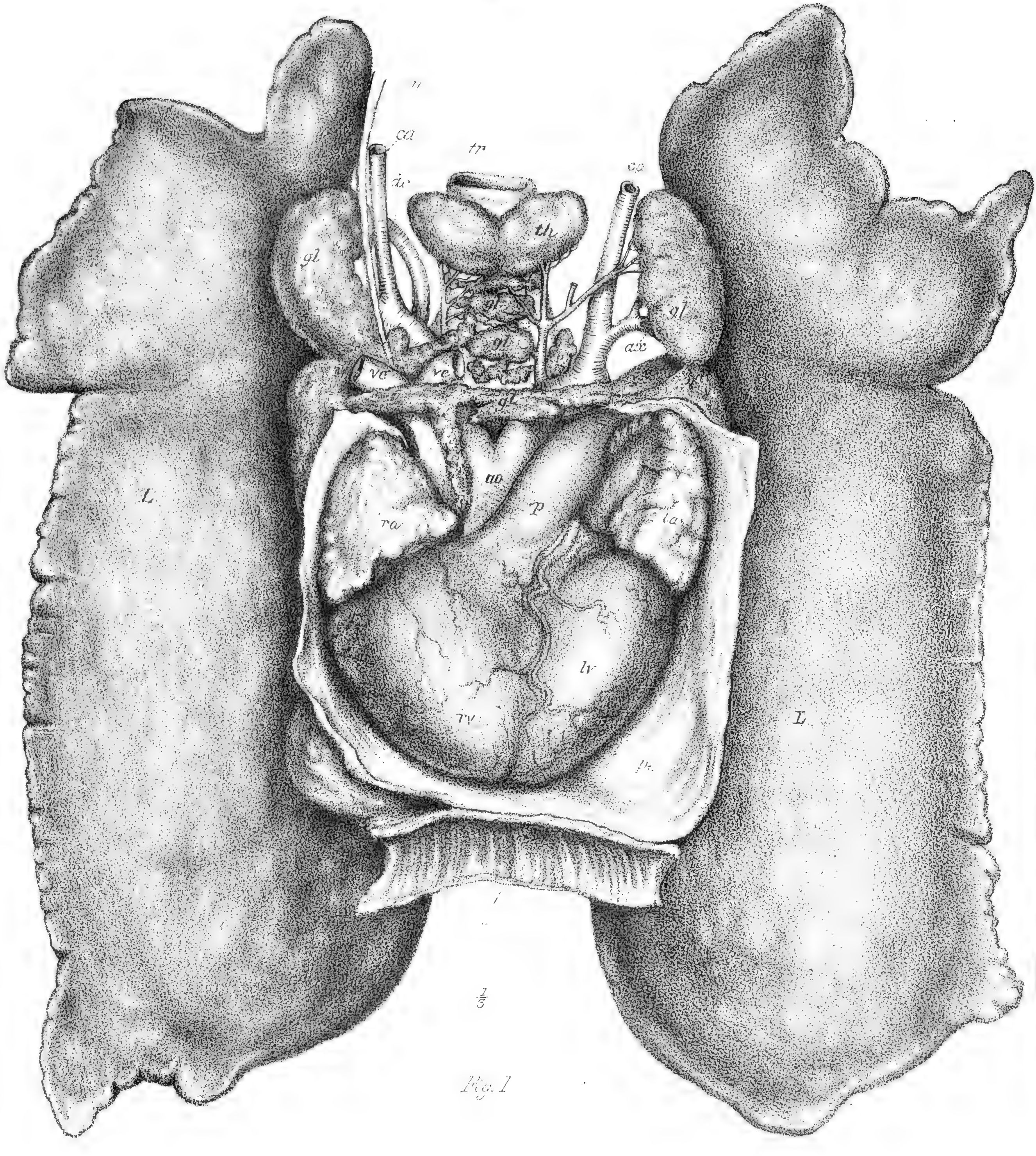


Fig. 1

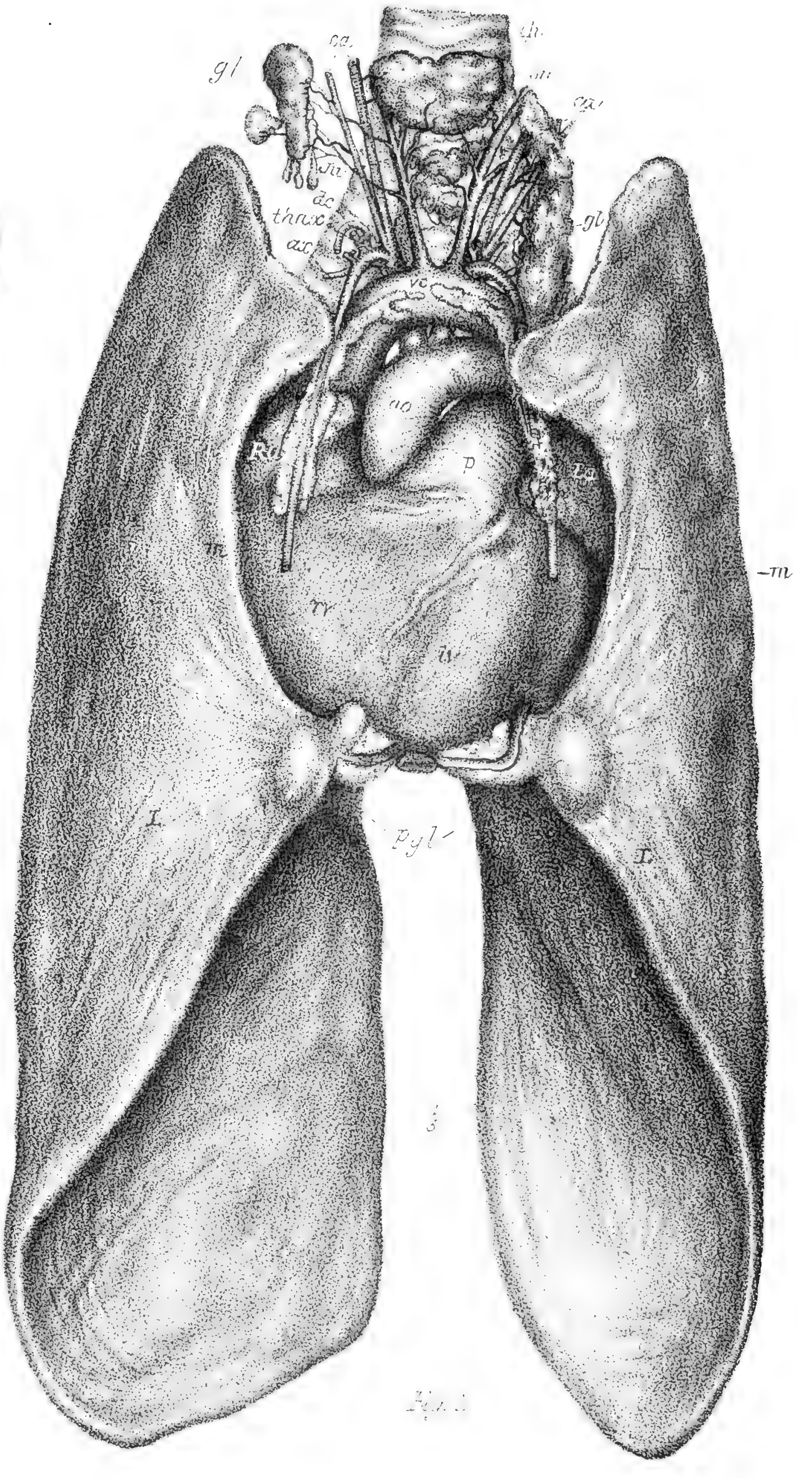


Fig. 2

PLATANISTA GANGETICA.

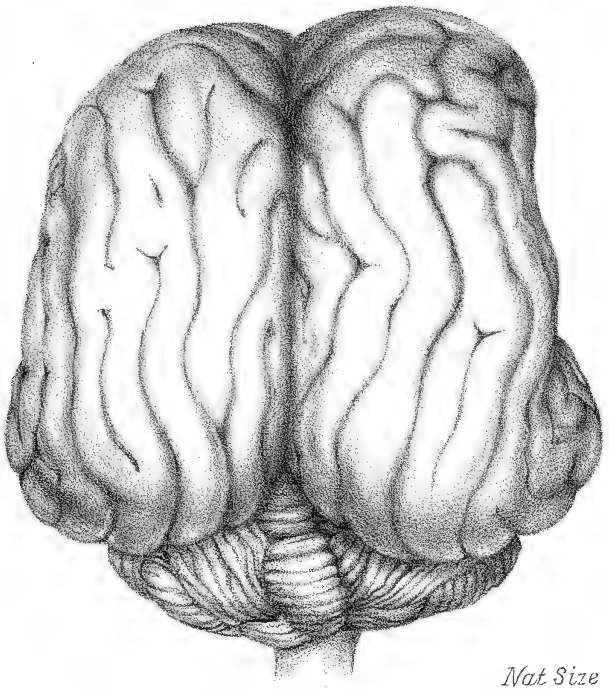
ORCELLA BREVIROSTRIS

HEARTS LUNGS & GLANDS.

C. Berjeau. Lith.

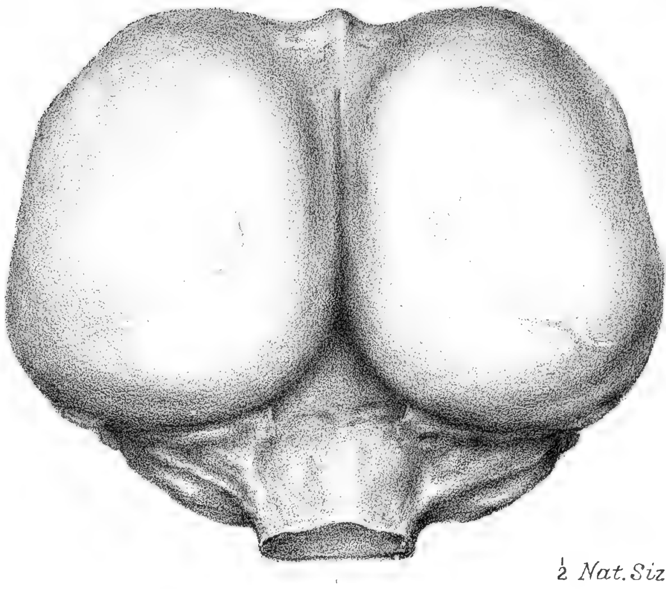
Banks & Co., Edinr.

Fig. 1.



Nat. Size

Fig. 4



½ Nat. Size

Fig. 2.

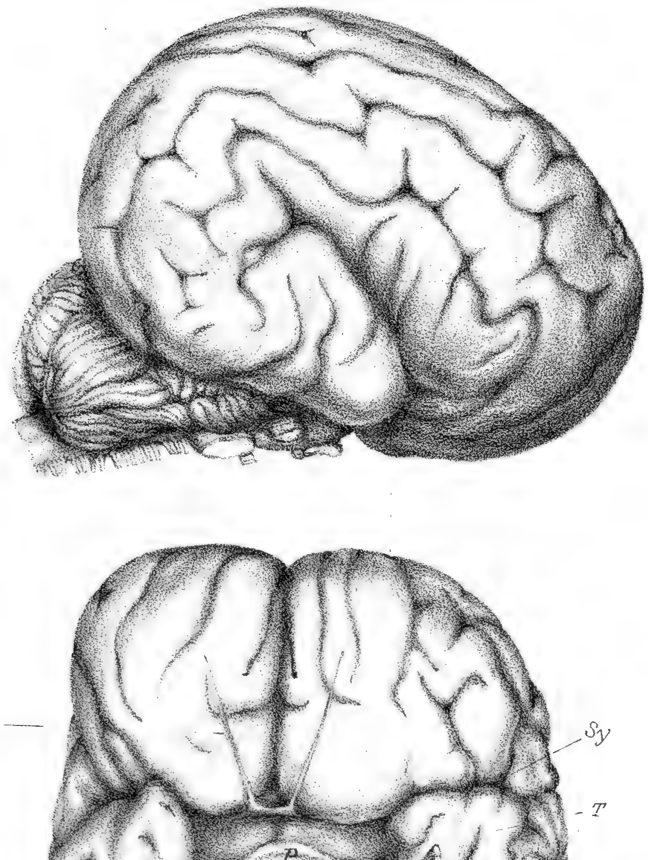


Fig. 5.

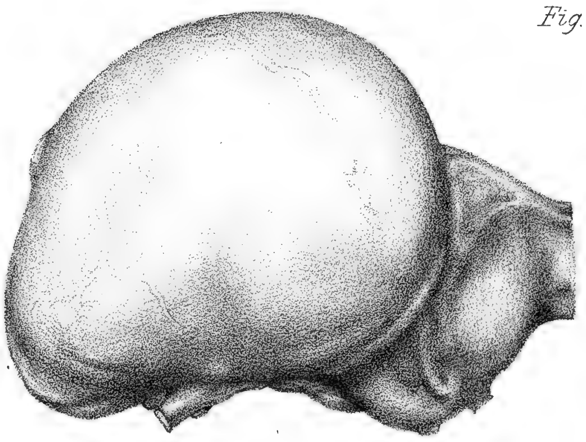


Fig. 3

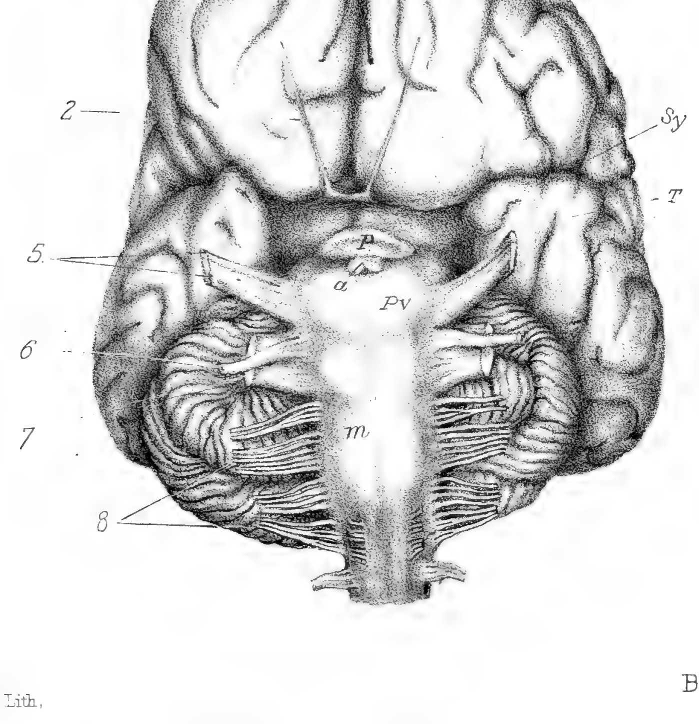
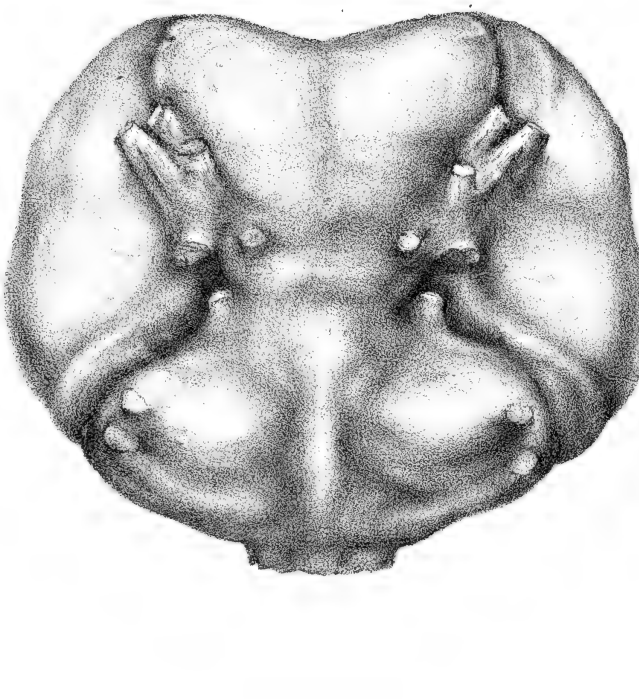


Fig. 6



C. Berjeau, Lith.

BRAIN.

Banks & Co., Edin.r

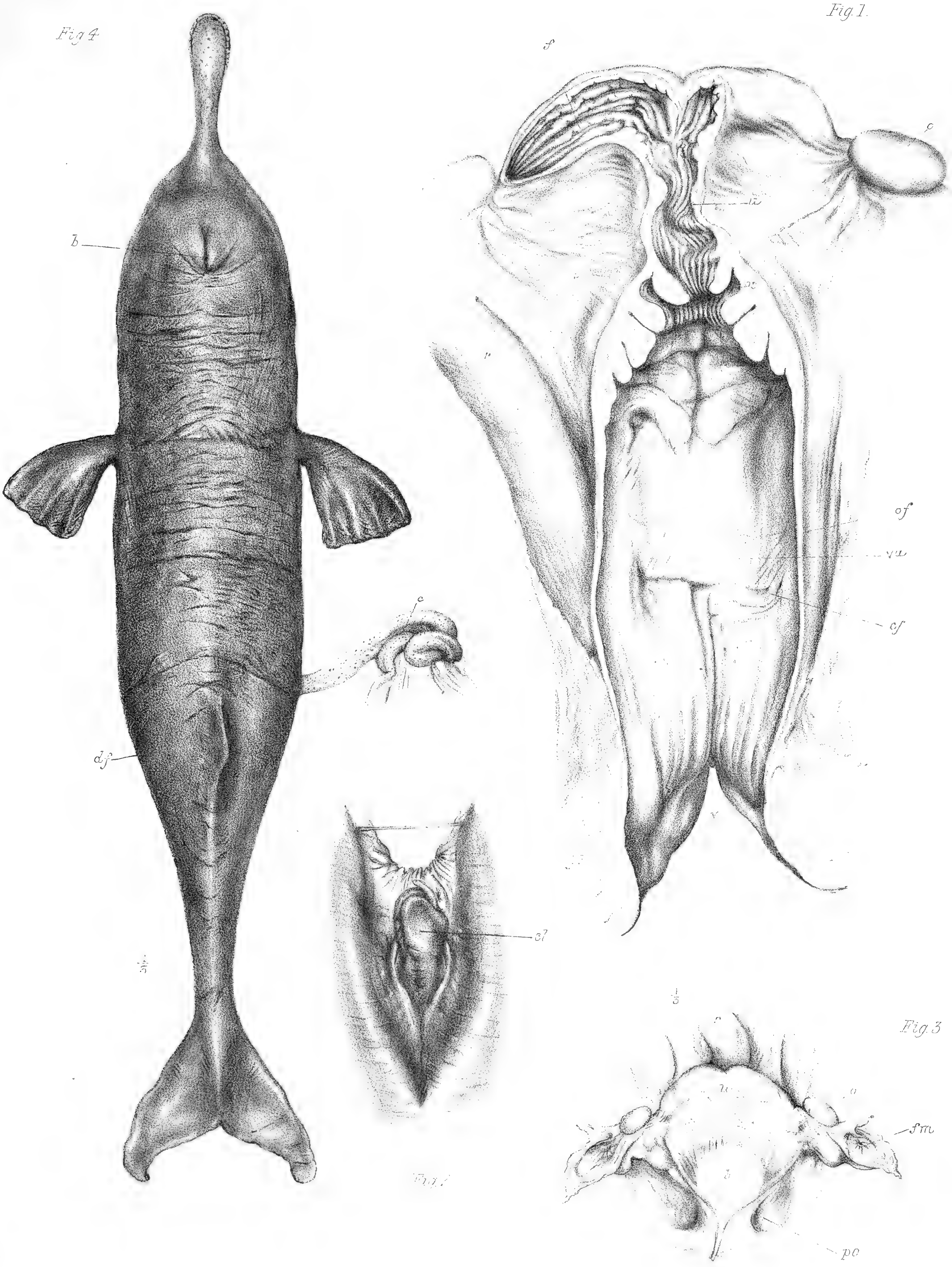
PLATANISTA GANGETICA.

ORCELLA FLUMINALIS, ANDR.

[illegible]

Banks & Co., Edinr

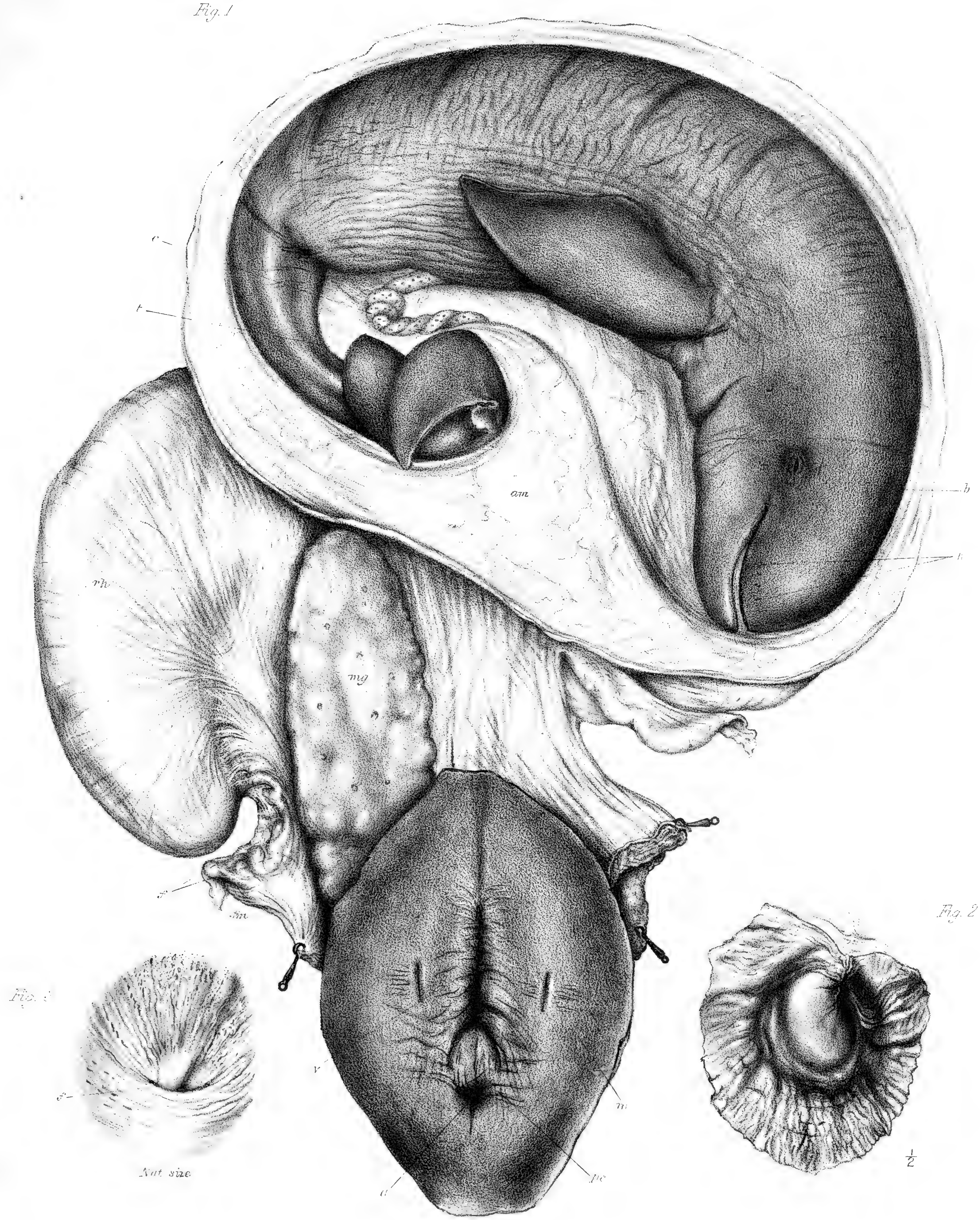
♀ GENITALIA & FOETUS IN UTERO; PLATANISTA GANGETICA.



J. Berjeau. Lith.

Banks & Co. Edin.

VIRGIN GENITALIA & DORSUM FOETUS; PLATANISTA GANGETICA.



C. Berjeau, Lith.

♀ GENITALIA & FOETUS IN UTERO, ORCELLA BREVIROSTRIS.

Banks & Co., Edinr.

Fig. 9

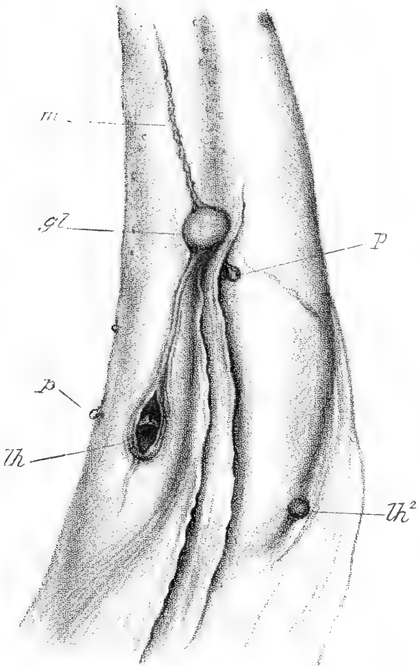


Fig. 2

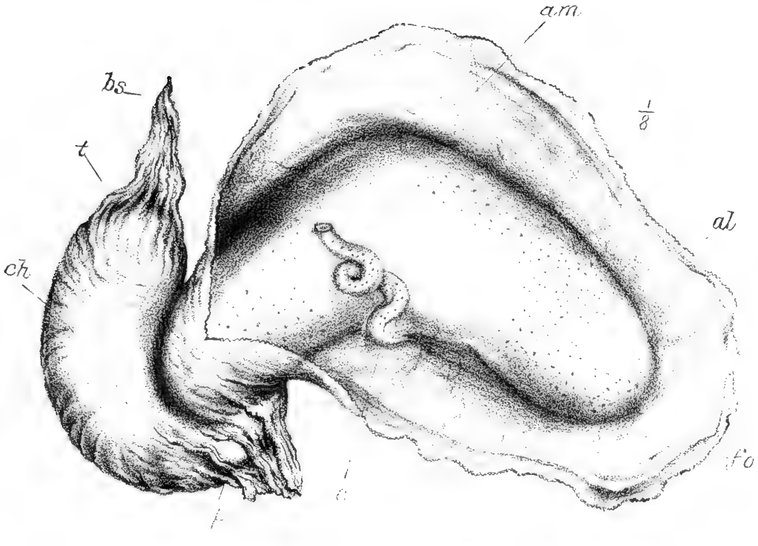


Fig. 5

Fig. 4

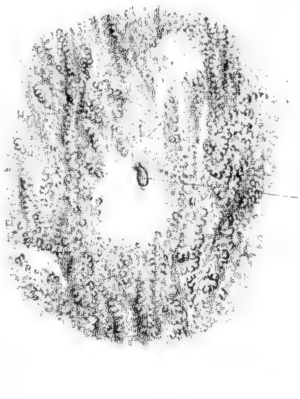


Fig. 3

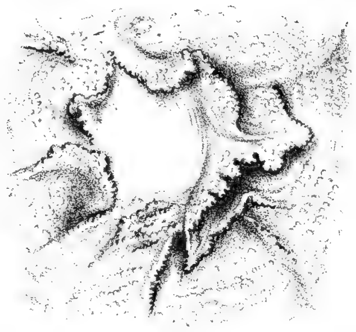


Fig. 6

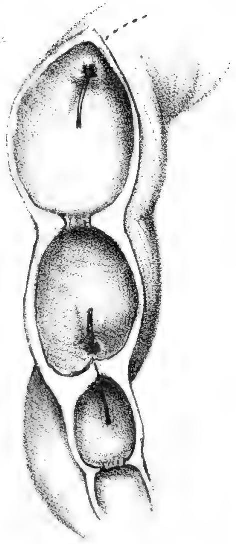
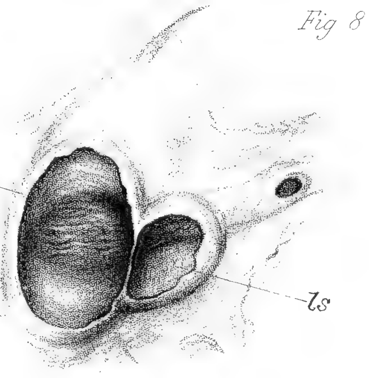


Fig 8



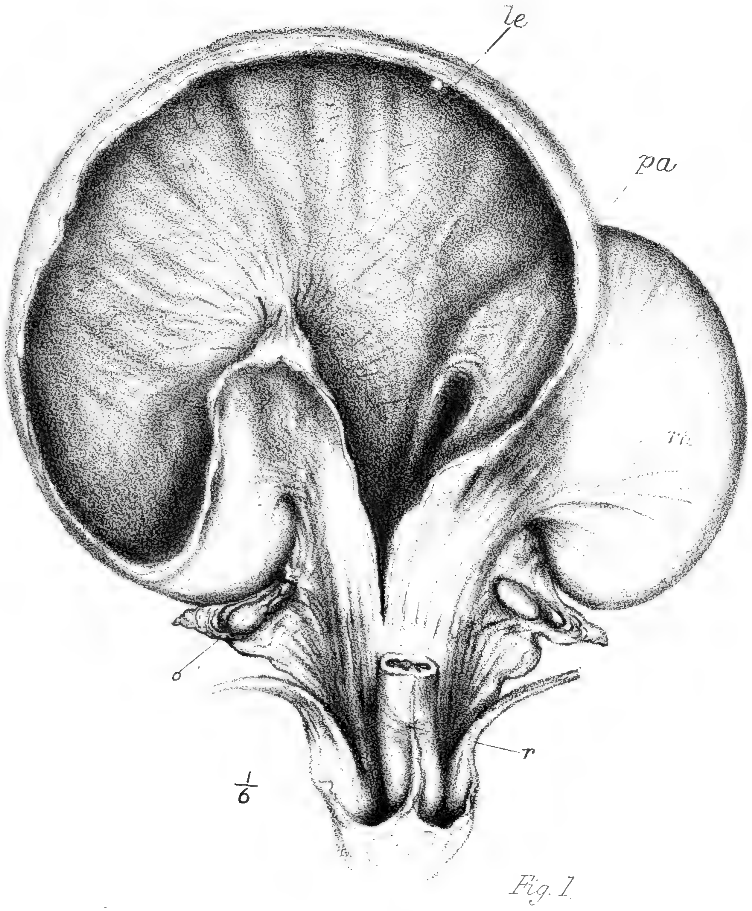
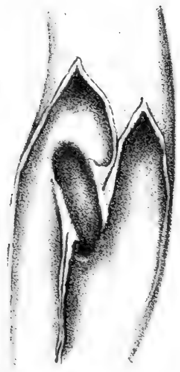


Fig. 1.

Fig. 10



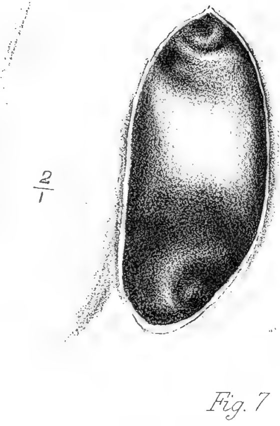
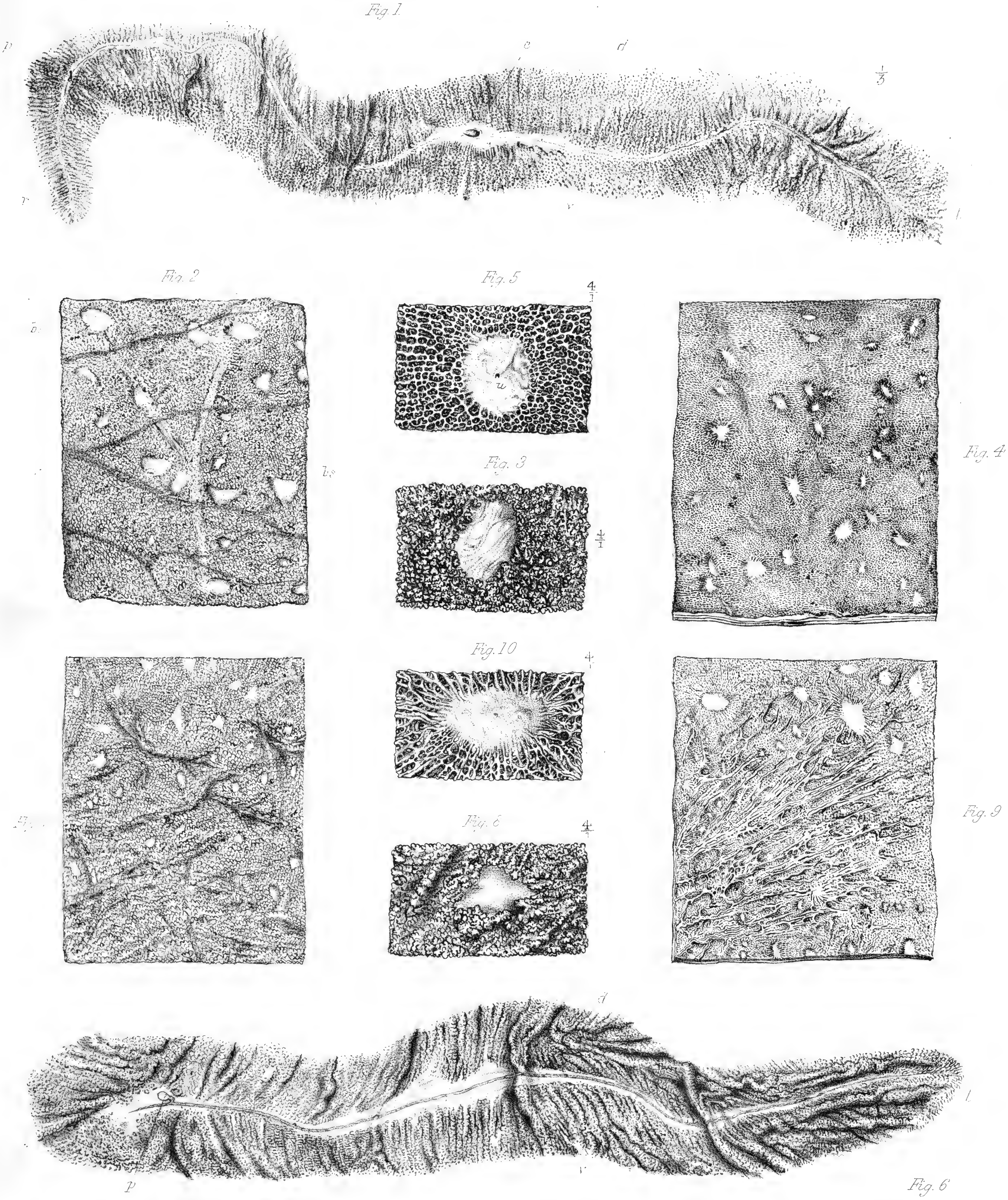


Fig. 7

C. Berjeau, Lith.

FOETAL ENVELOPES, GLANDULAR STRUCTURES & PECULIARITIES OF UMBILICAL CORD IN ORCELLA BREVIROSTRIS & PLATANISTA GANGETICA.

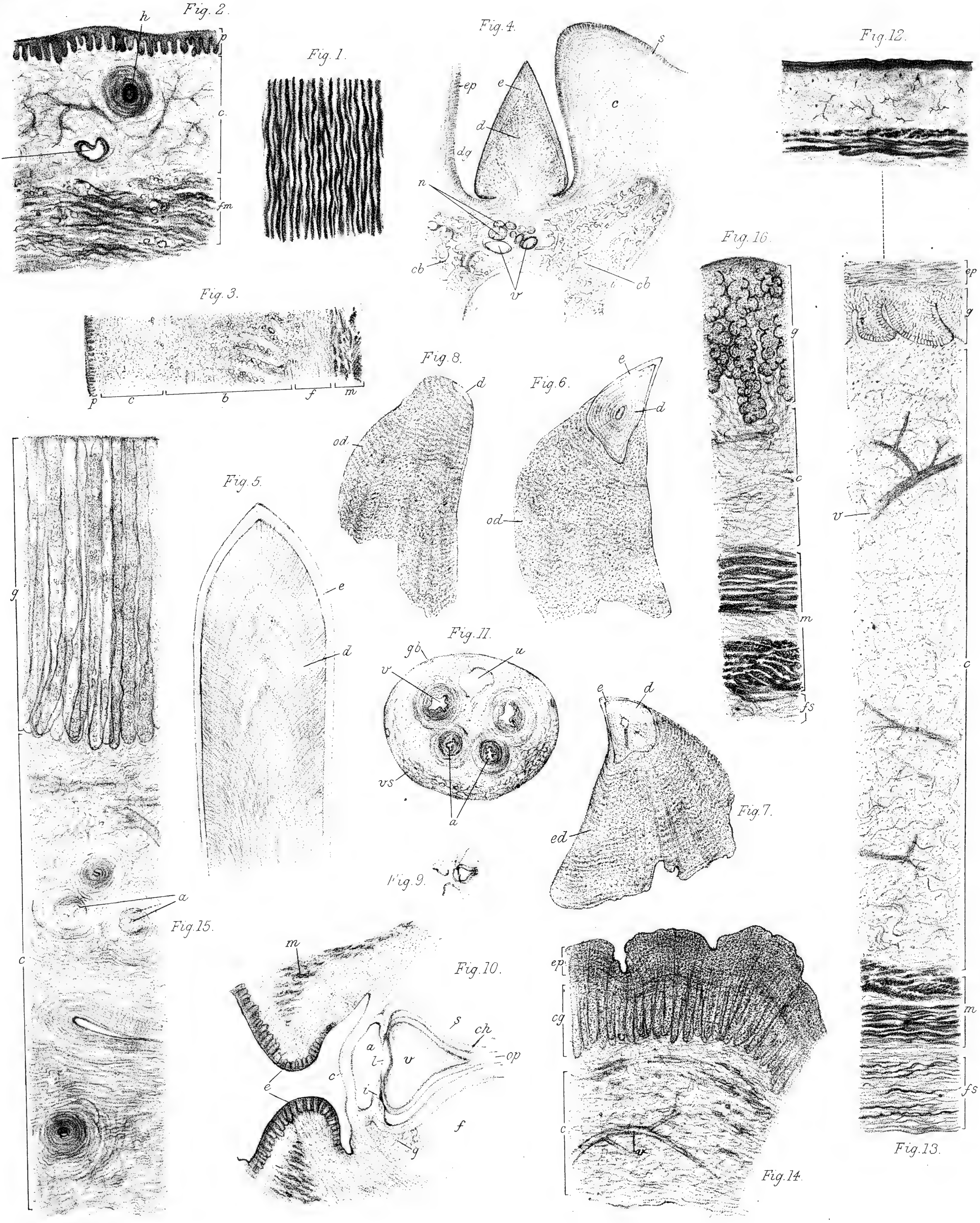
Banks & Co., Edinʳ



CHORIONIC & UTERINE BARE PATCHES, & ORIFICES UTRICULAR GLANDS
IN PLATANISTA AND ORCELLA.

C. Berjeau, Lith.

Banks & Co., Edinr.



MICROSCOPIC STRUCTURE OF
SKIN, TEETH, STOMACH, &c. OF PLATANISTA & ORCELLA.

Berjeau lith. Hanhart imp.

Fig. 2.

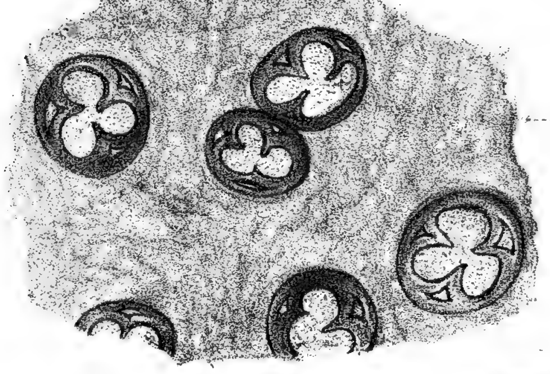


Fig. 1.

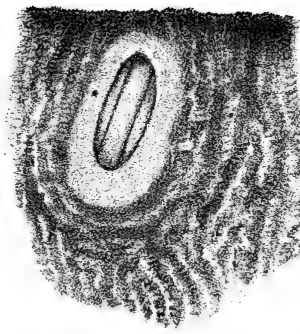


Fig. 6.

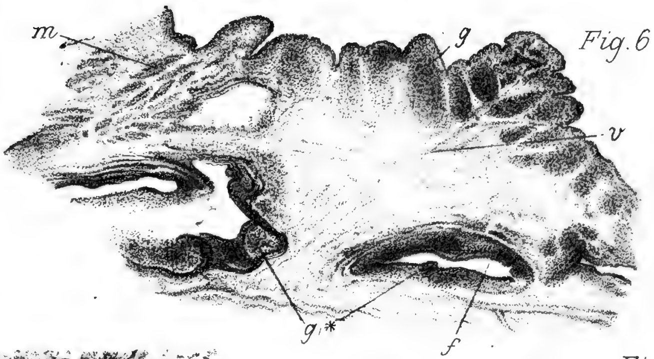


Fig. 11.

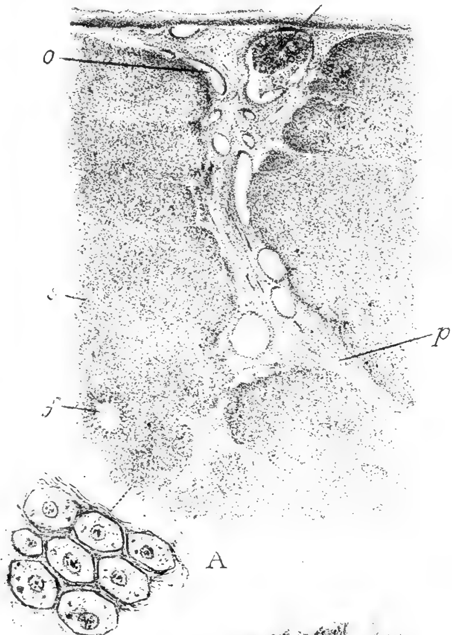


Fig. 4.

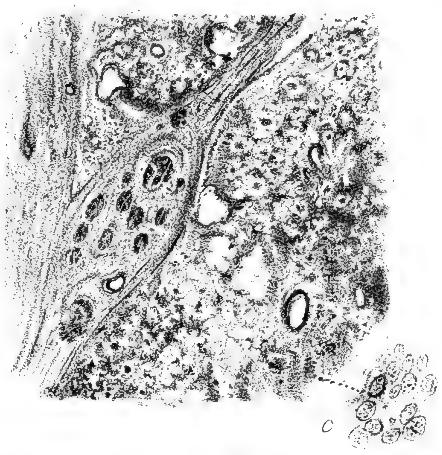


Fig. 7.

Fig. 5.

Fig. 8.

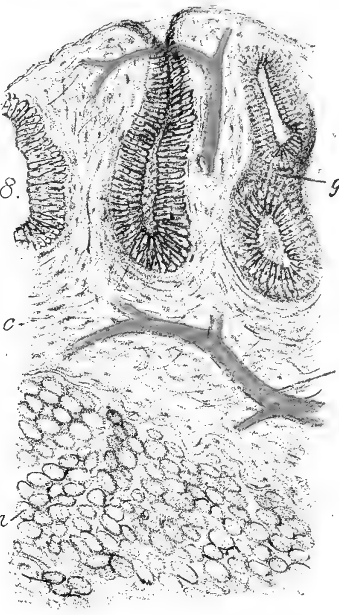


Fig. 16.

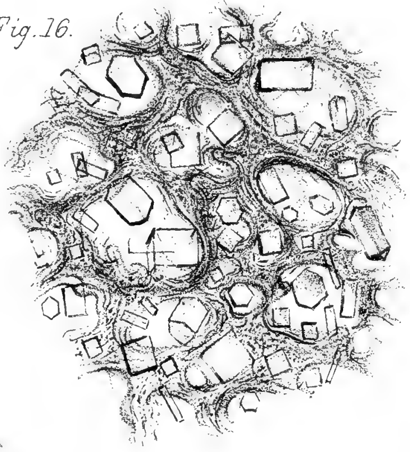


Fig. 3.

Fig. 9

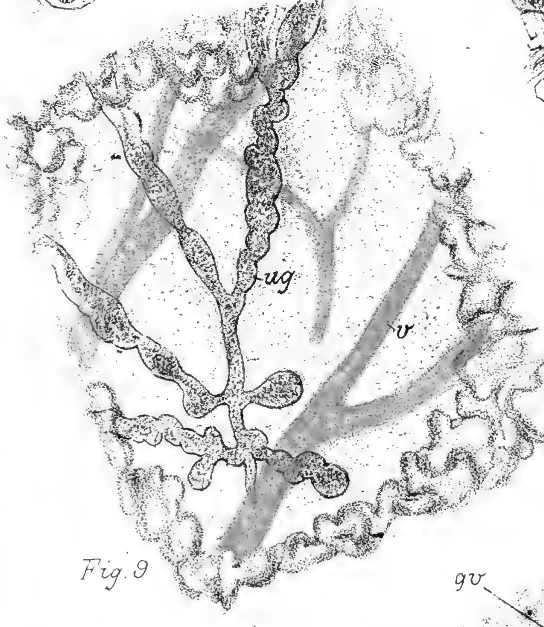


Fig. 15.

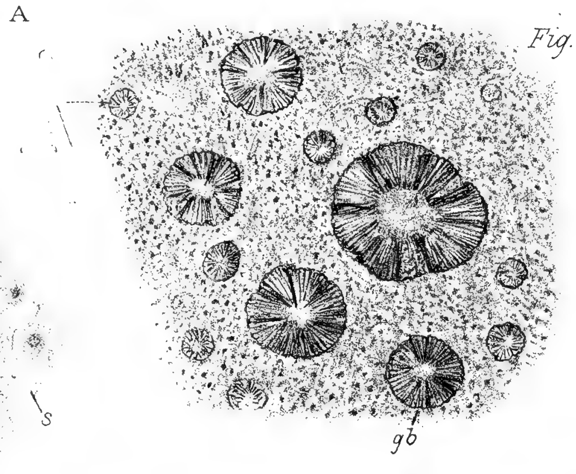


Fig. 10.

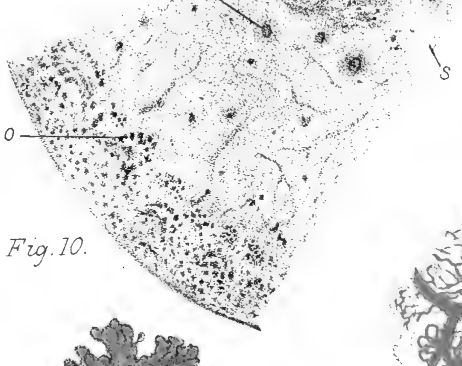


Fig. 14.

Fig. 13.

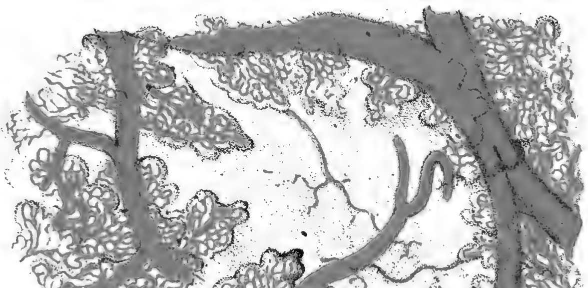
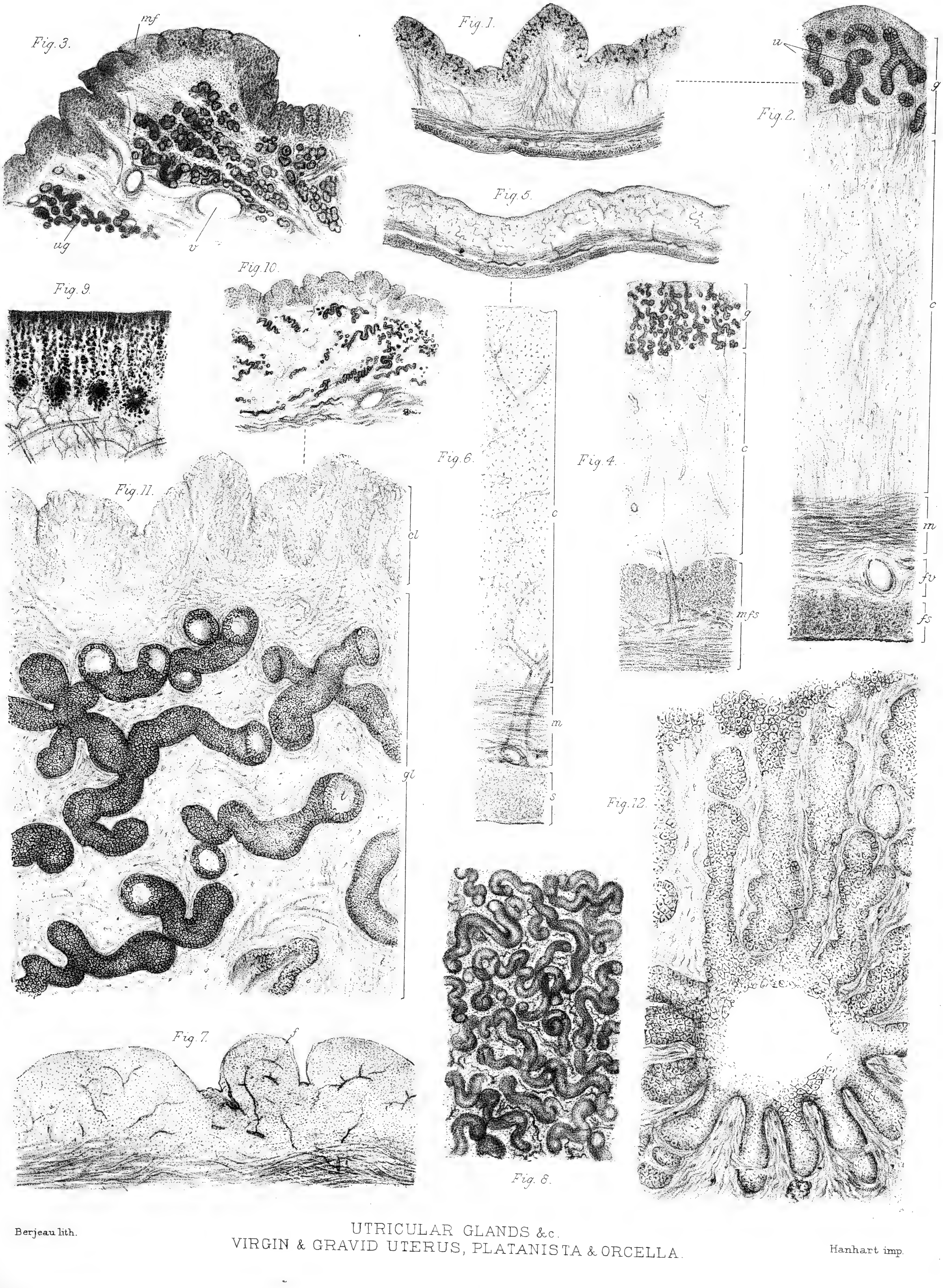


Fig. 12.

Berjeau lith.

STRUCTURAL PECULIARITIES, GLANDS, STOMACH, LUNGS, LARYNX, & UTERUS & OVARY, CHORION, &c. OF ORCELLA & PLATANISTA.

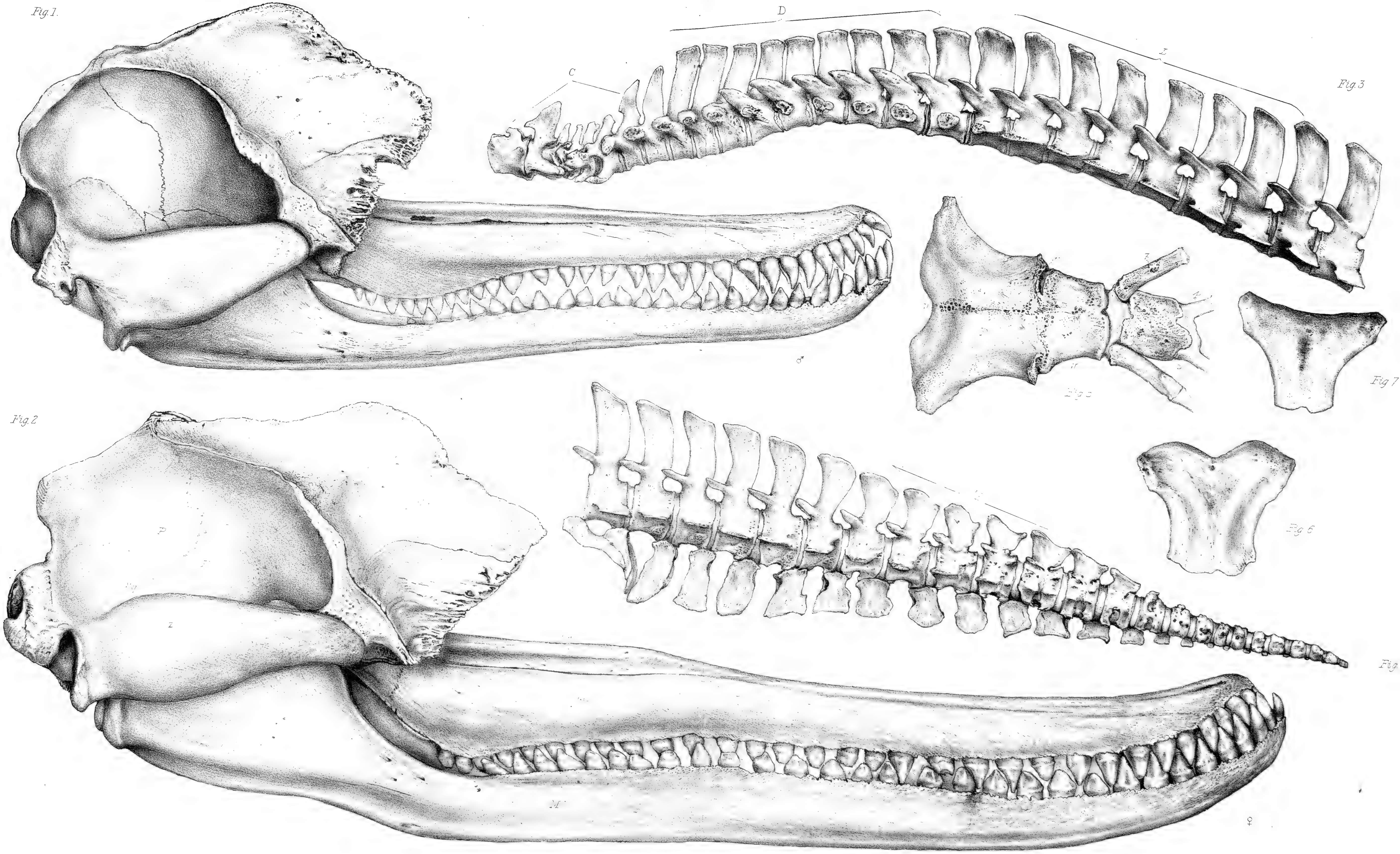
Hanhart imp.



Berjeau lith.

UTRICULAR GLANDS &c.
VIRGIN & GRAVID UTERUS, PLATANISTA & ORCELLA.

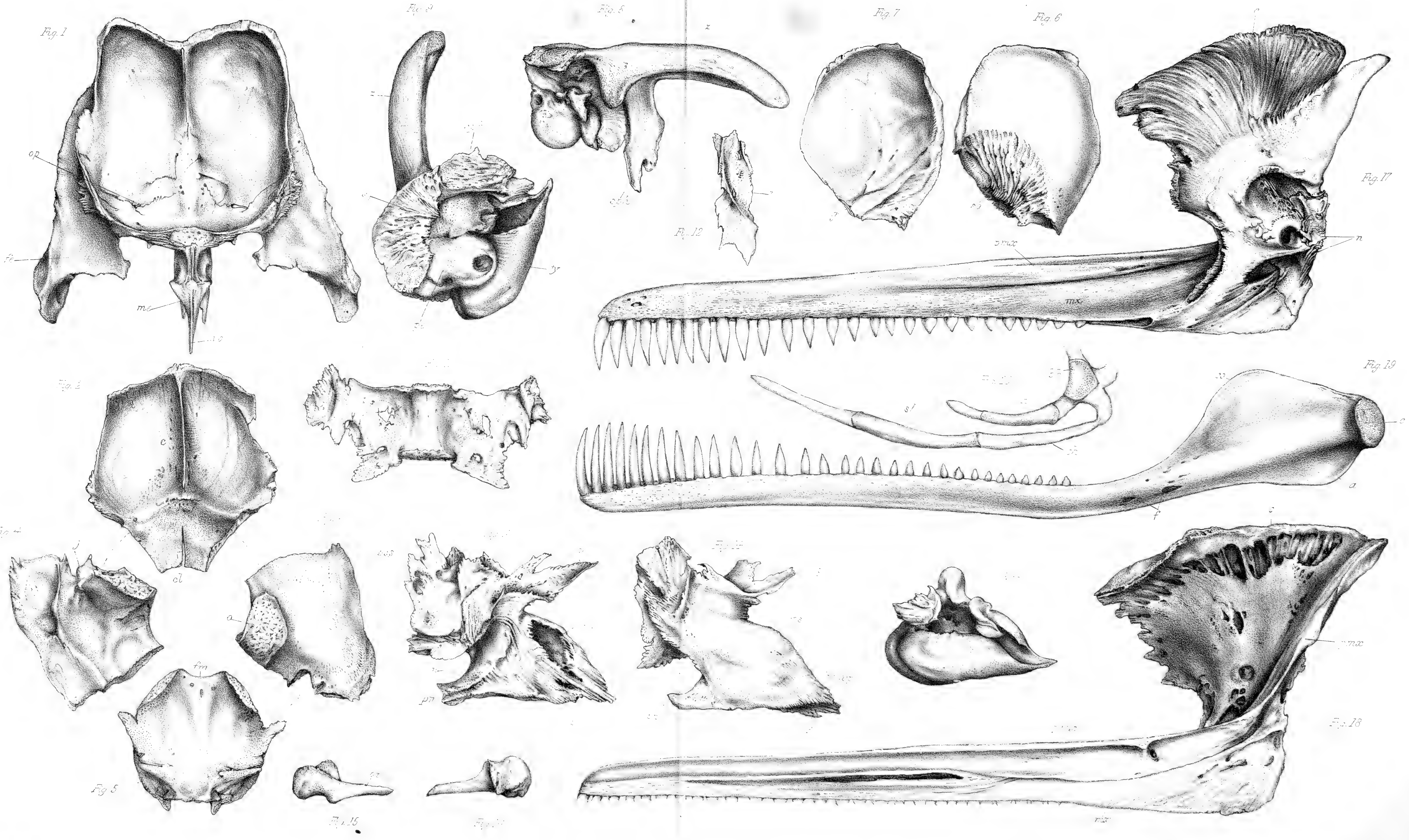
Hanhart imp.



G. Berjeau. Lith.

SPINE, STERNUM ♂&♀ CRANIA OF PLATANISTA GANGETICA.

Banks & Co. Edinr



SEPARATED SKULL-BONES OF PLATANISTA GANGETICA. Nat. Size.

Banks & Co. Edin.

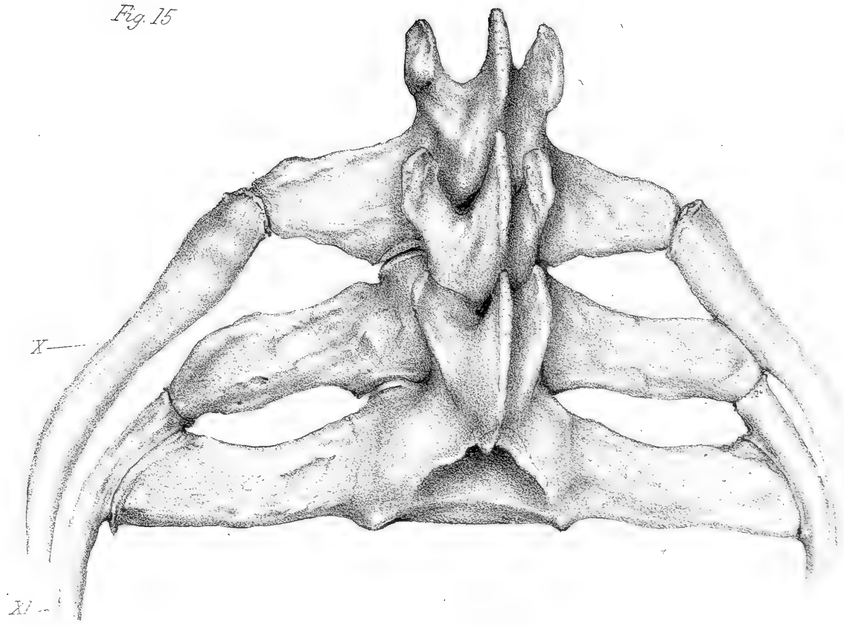


Fig. 15

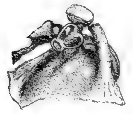


Fig. 5


Fig. 4

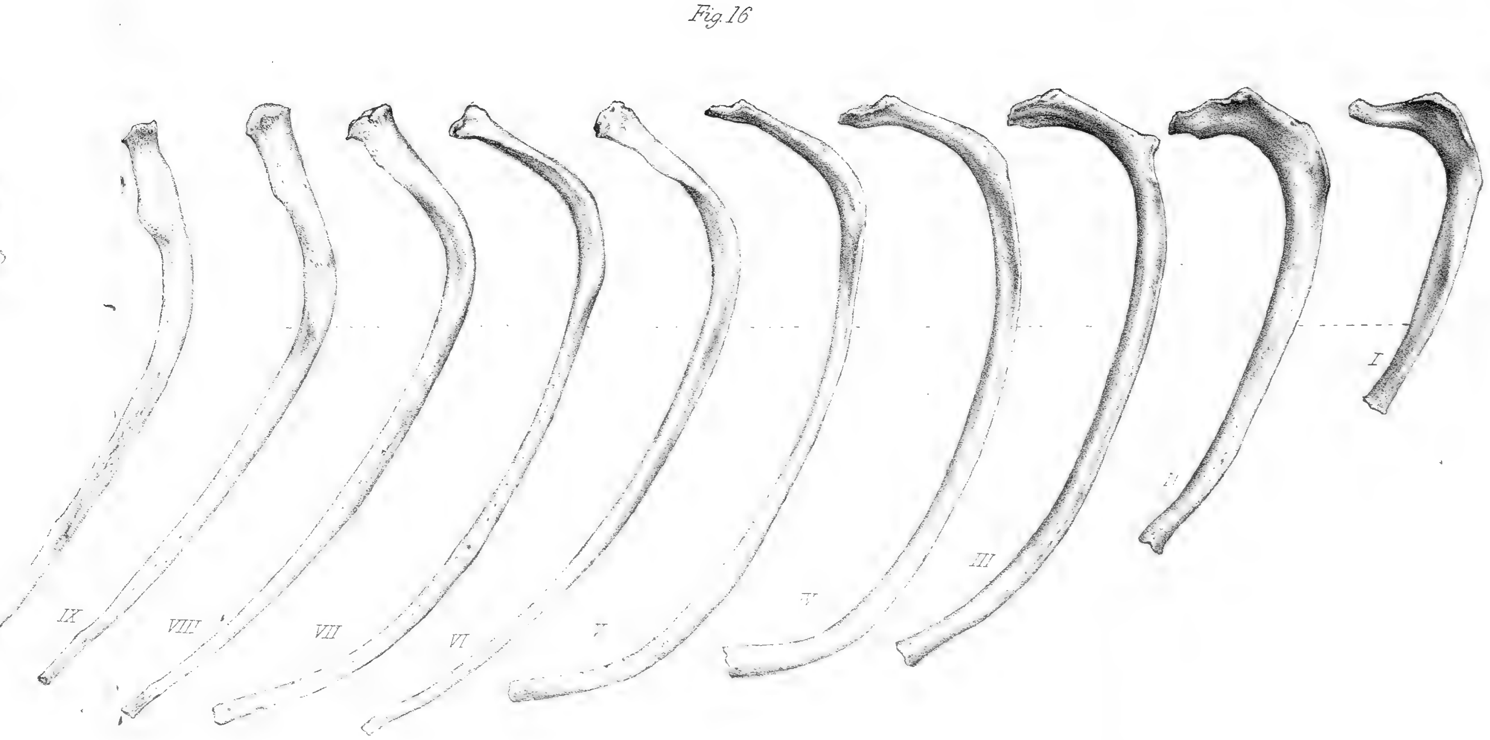


Fig. 16


Fig. 6

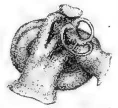


Fig. 2


Fig. 1


Fig.

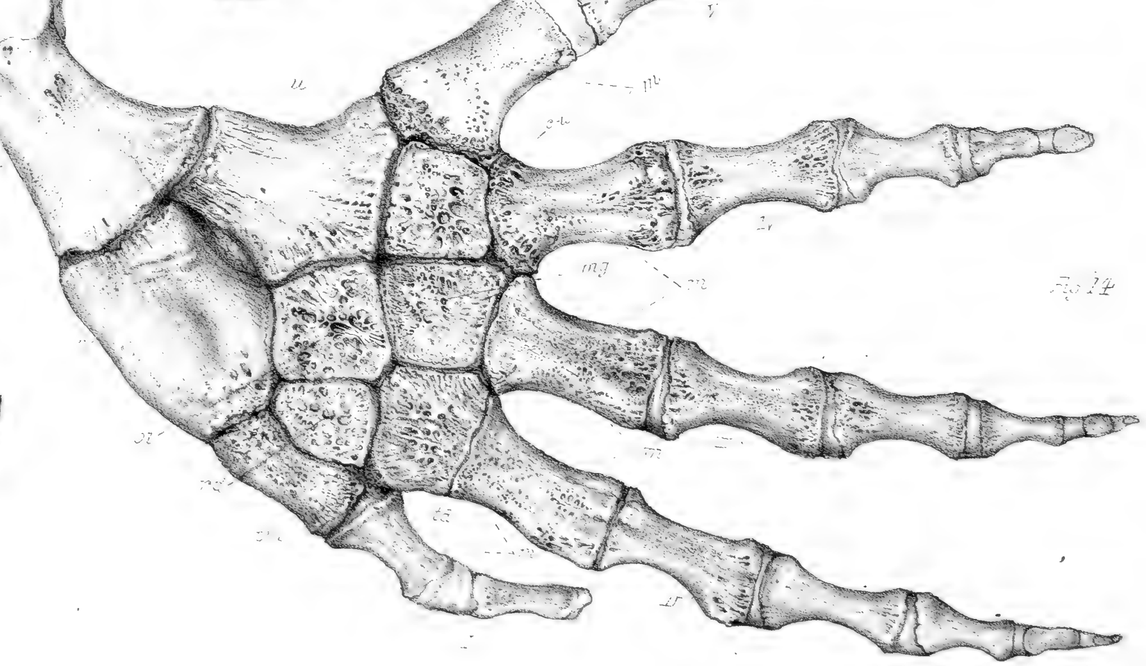


Fig. 14

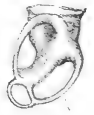


Fig. 12

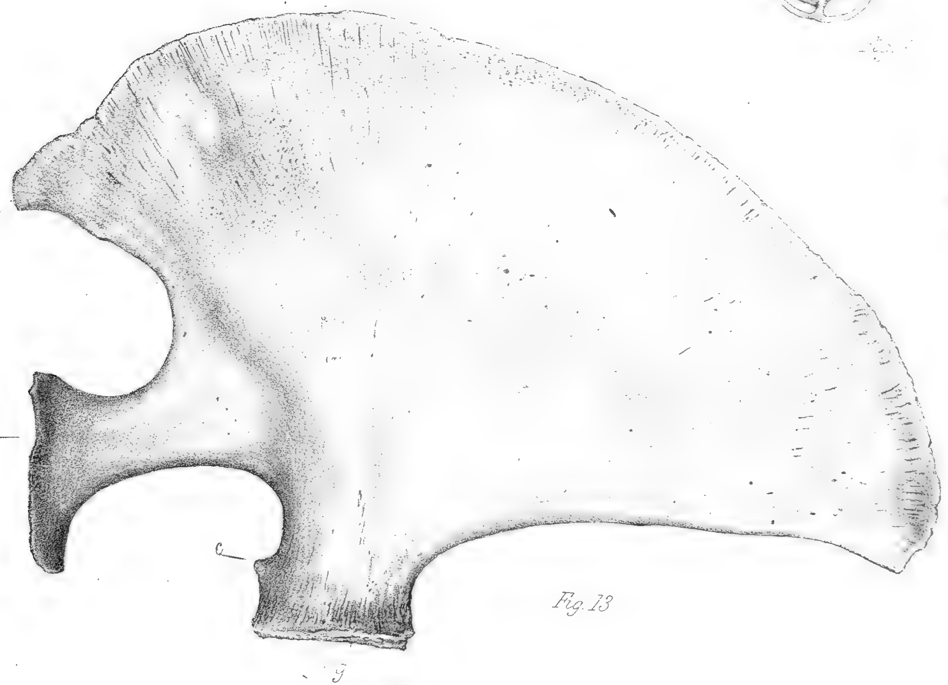


Fig. 13

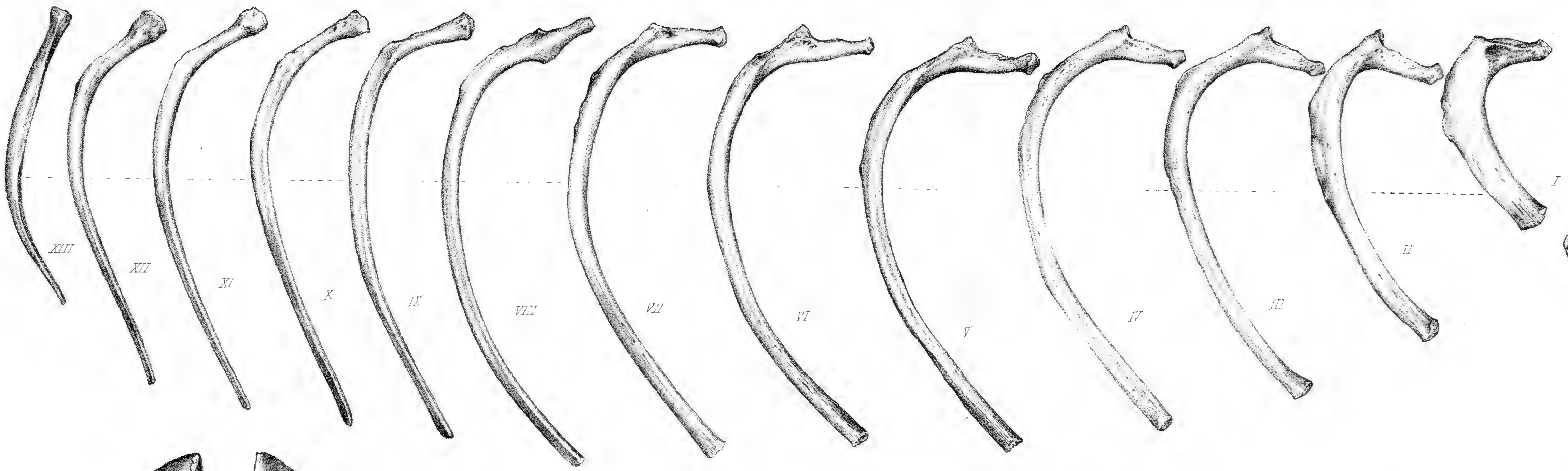

Fig. 11


Fig. 10

C. Berjeau, Lith.

LIMB BONES, VERTEBRÆ AND RIBS OF PLATANISTA GANGETICA.
WITH COMPARATIVE SERIES EAR LABYRINTH OF OTHER GENERA.

Fig. 10



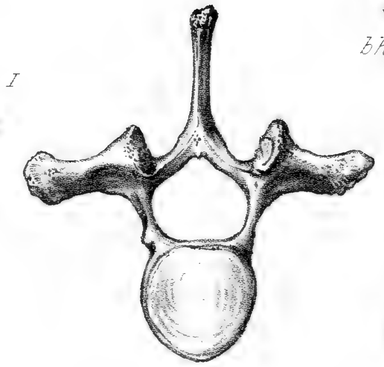


Fig. 7

Fig. 8

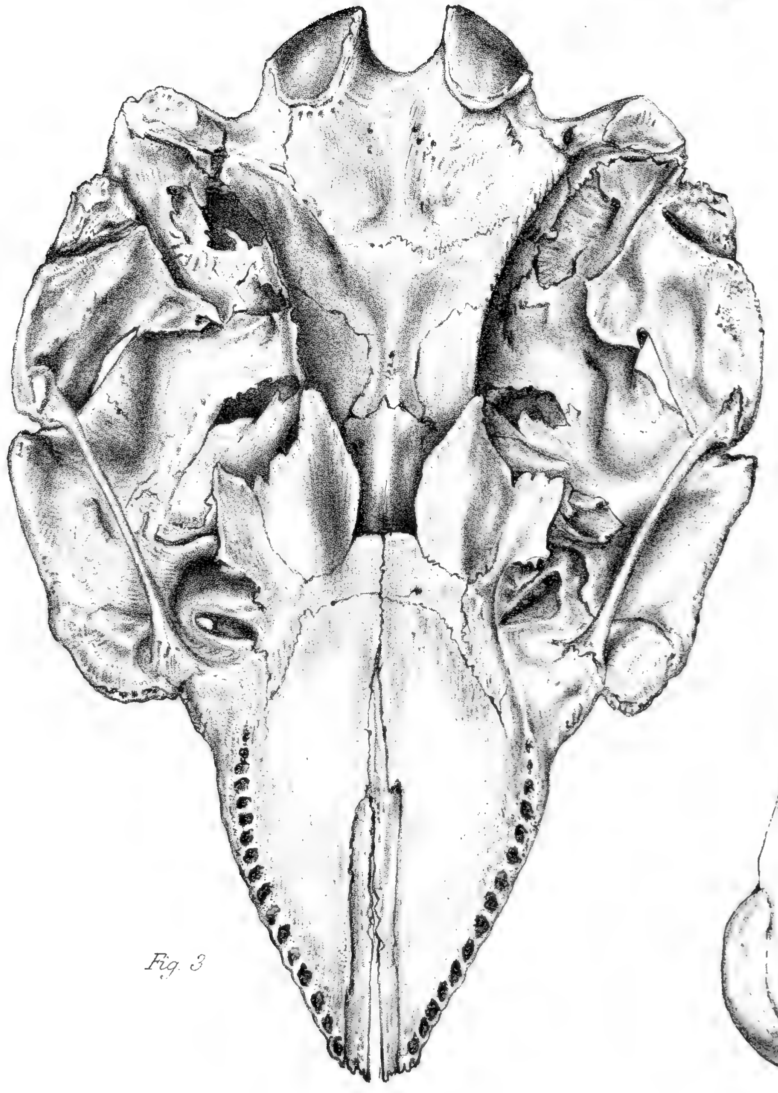


Fig. 3

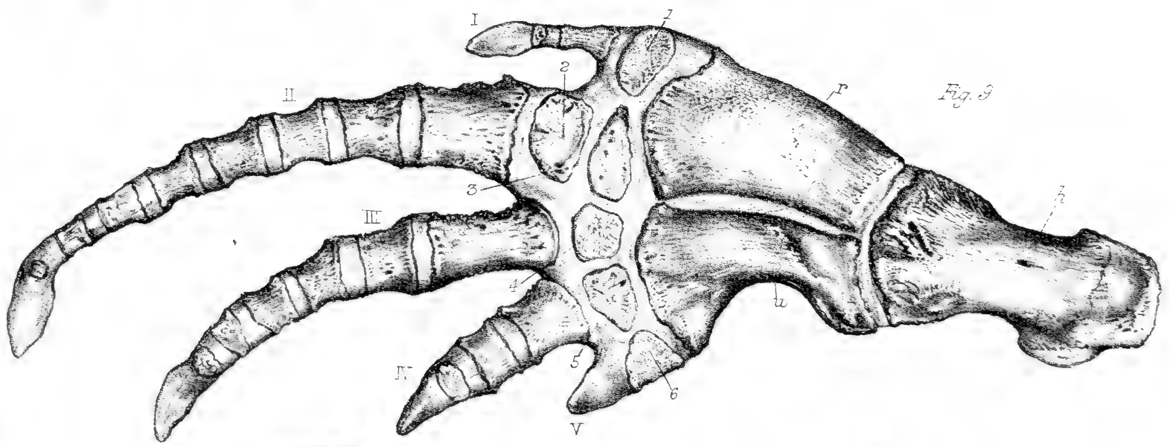
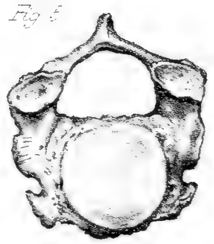


Fig. 9

Fig. 6



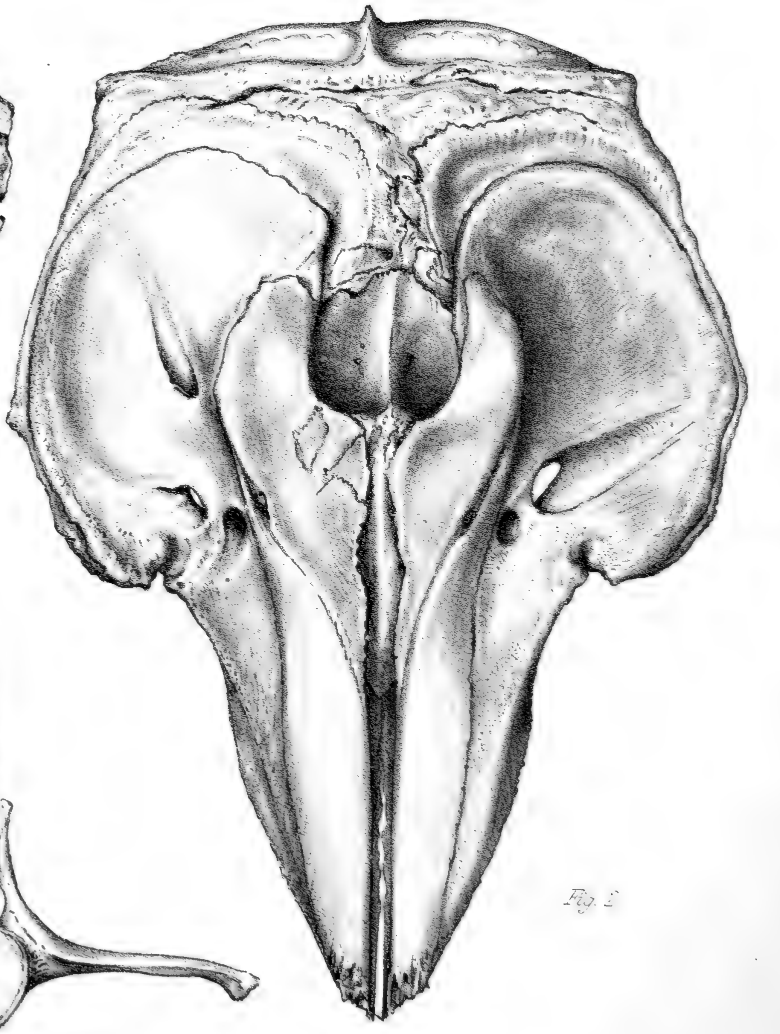


Fig. 2

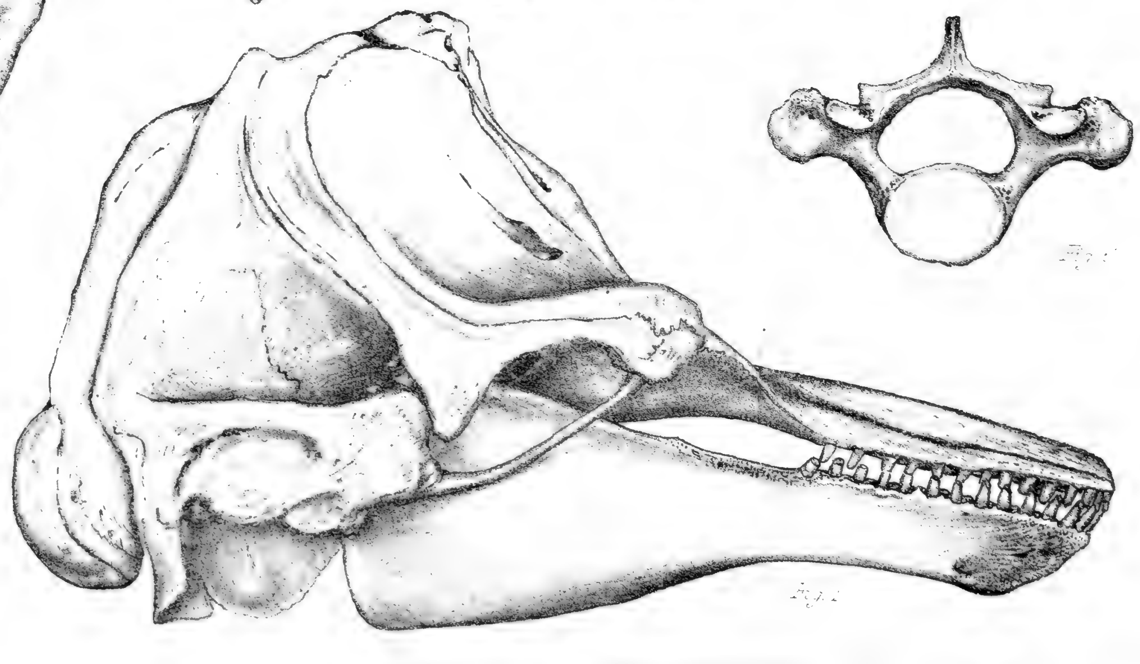


Fig. 1

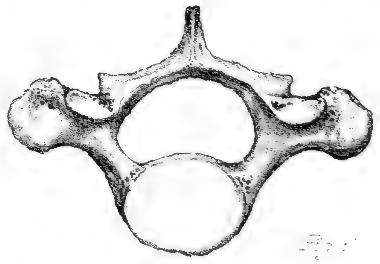


Fig. 4

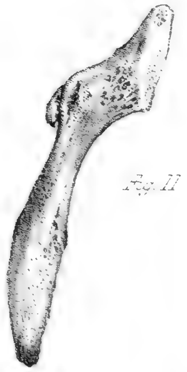


Fig. 11

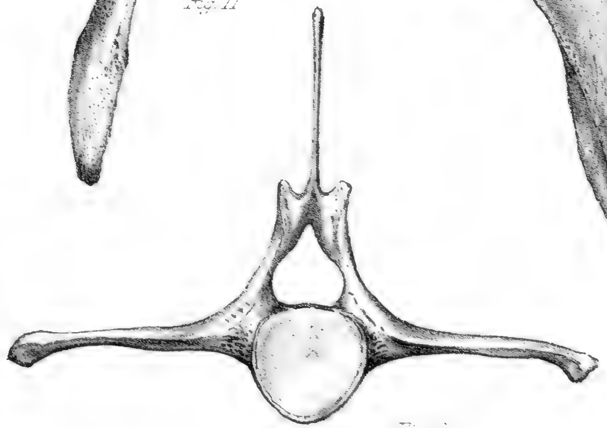
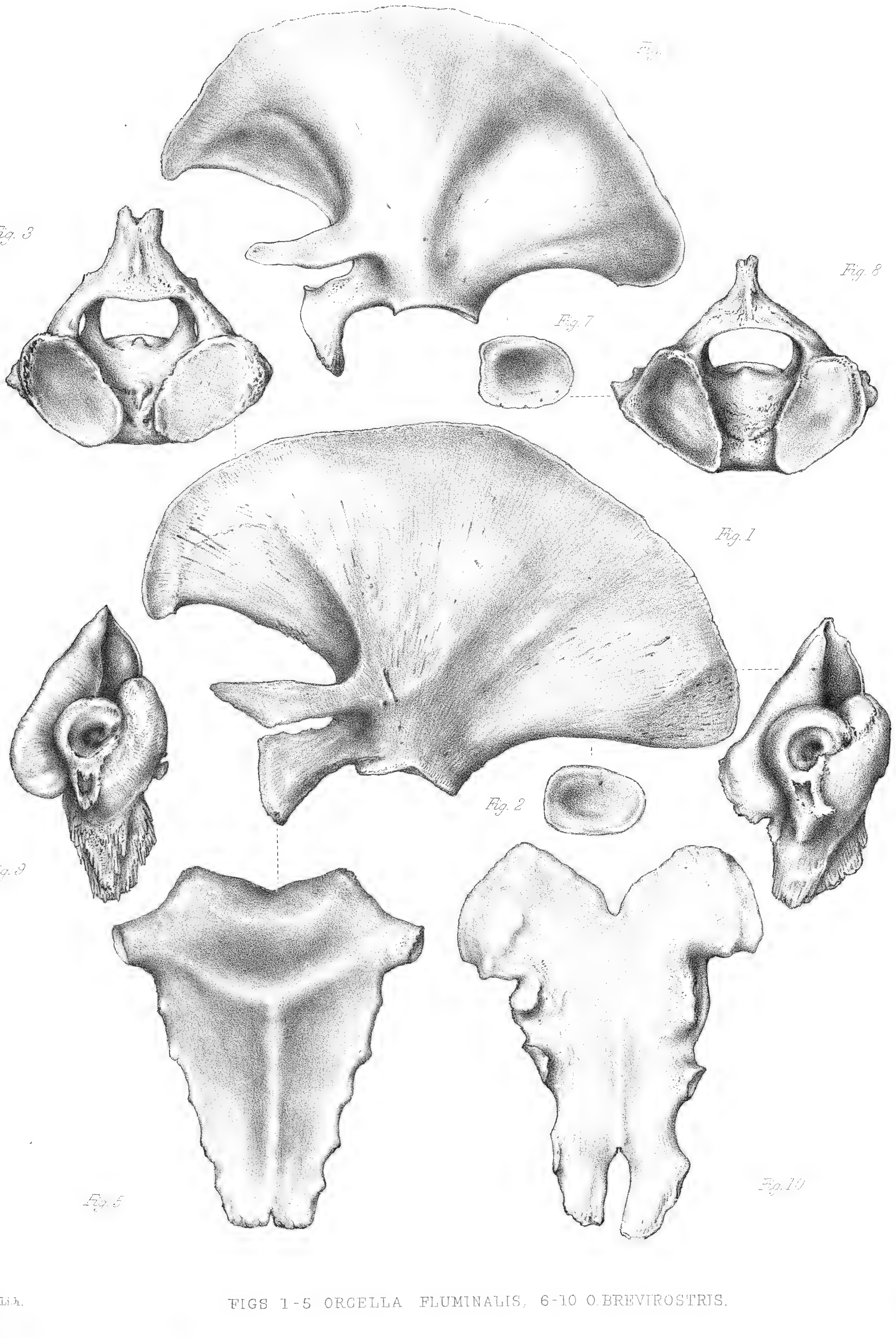


Fig. 5

C. Berjeau, Lith.

SKELETAL CHARACTERISTICS OF ORCELLA FLUMINALIS.

Banks & Co. Edinr



C. Berjeau. Lith.

FIGS 1-5 ORCELLA FLUMINALIS, 6-10 O. BREVIROSTRIS.

Fig. 1

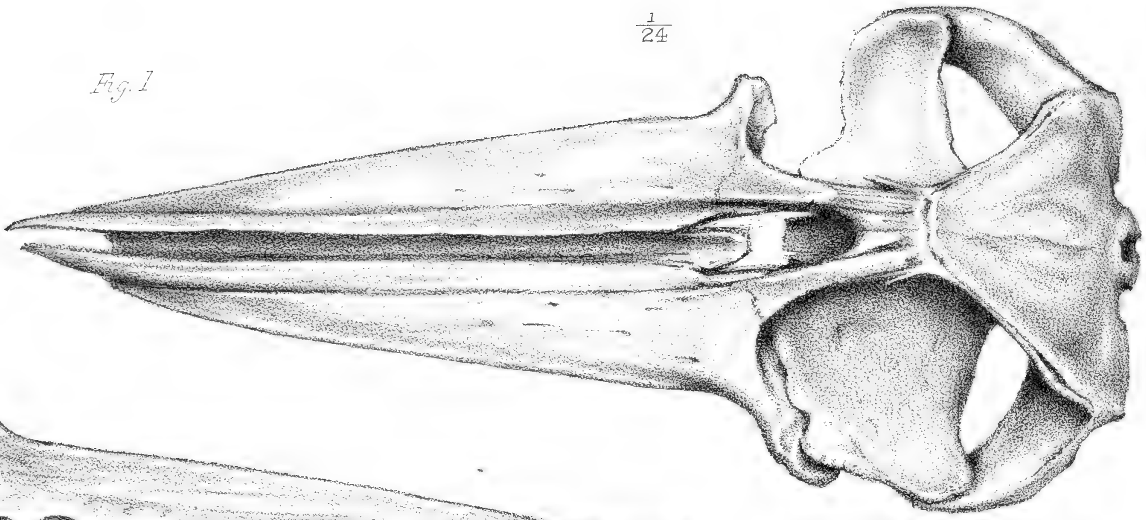


Fig. 3

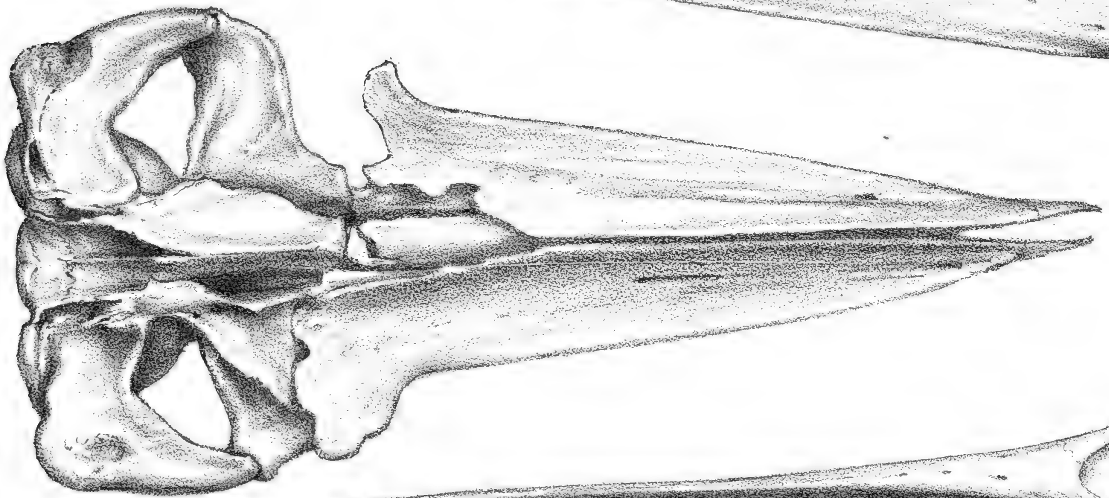


Fig. 2

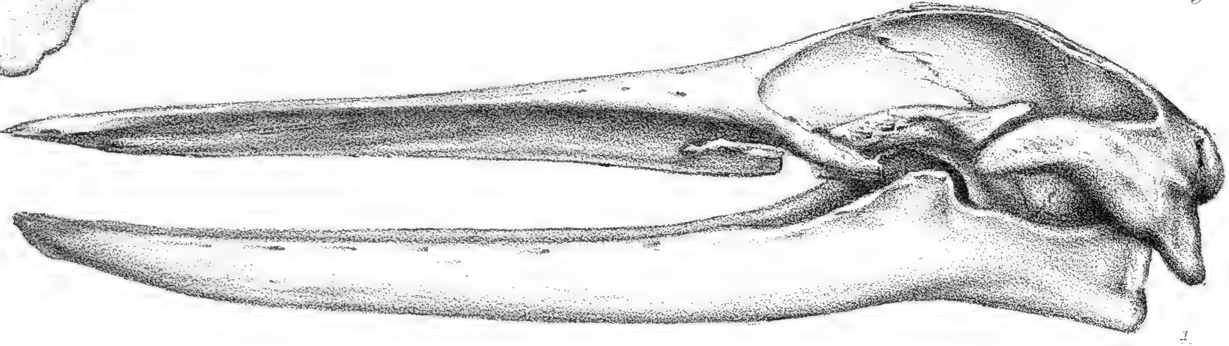


Fig. 6

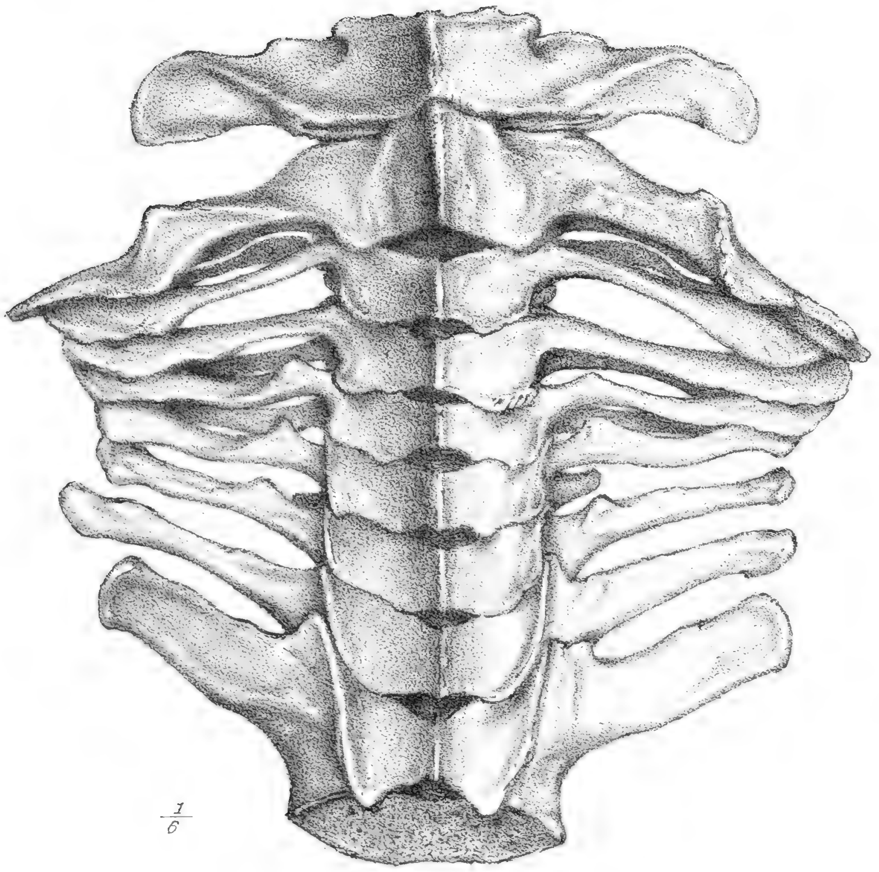


Fig. 4

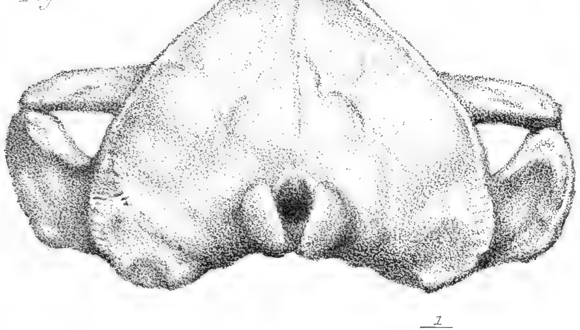
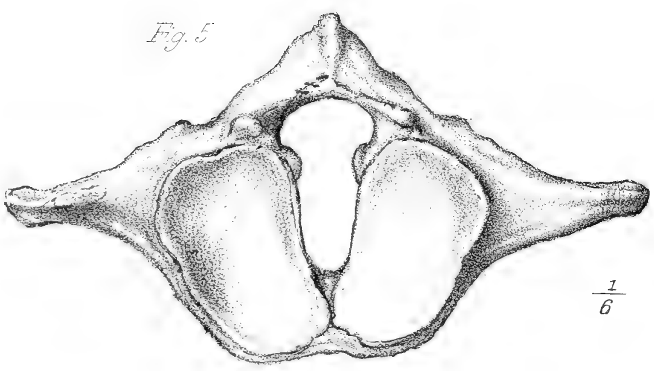


Fig. 5

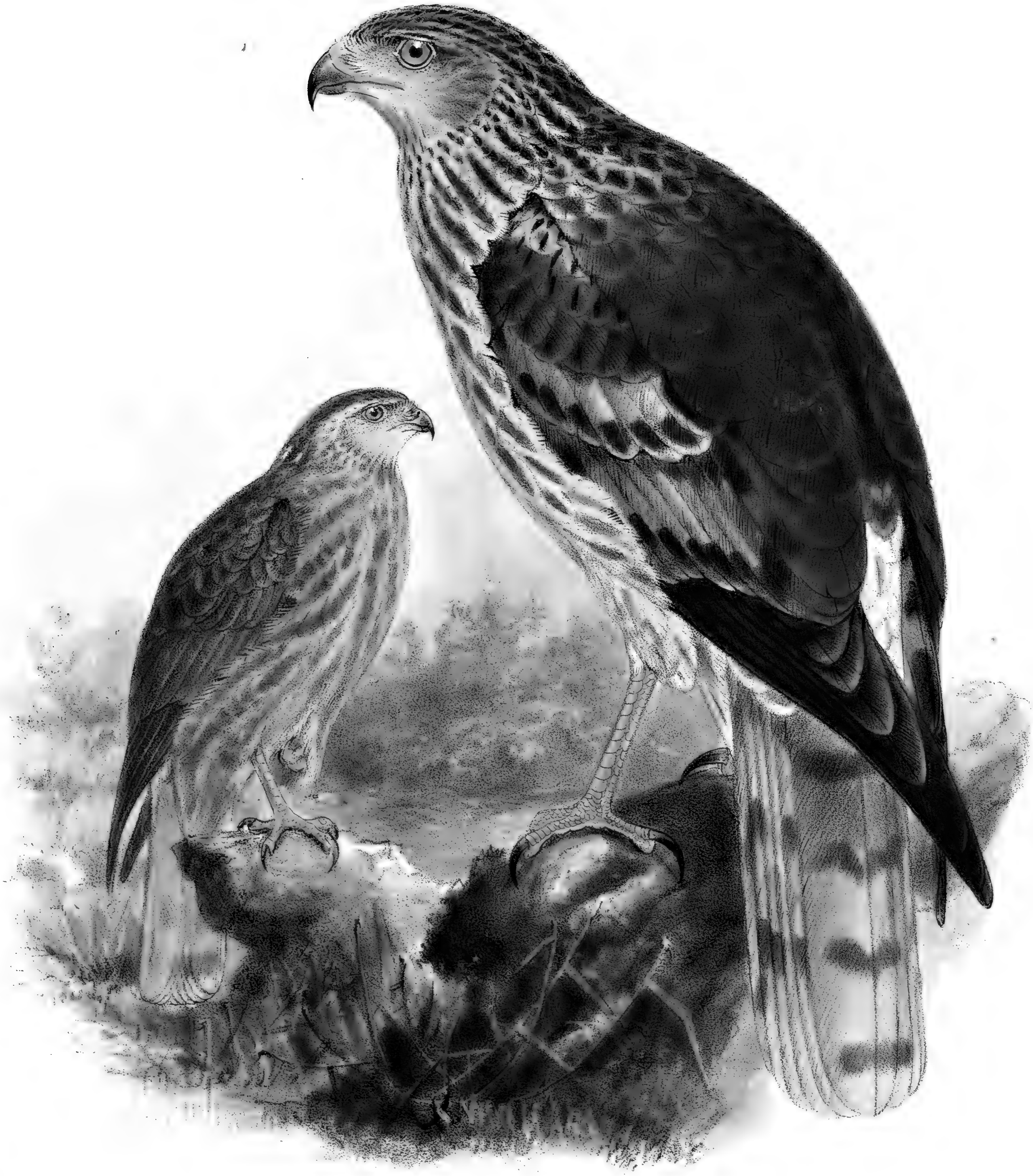


C. Berjeau. Lith.

SITTANG WHALE

Banks & Co., Edinr.

J. G. Keulemans Lith. CIRCUS MELANOLEUCUS. ♂. Banks & Co. Edinʳ.



J. G. Keulemans lith.

CIRCUS MELANOLEUCUS ♀ & YOUNG.

Banks & Co. Edinʳ

J. G. Keulemans lith.

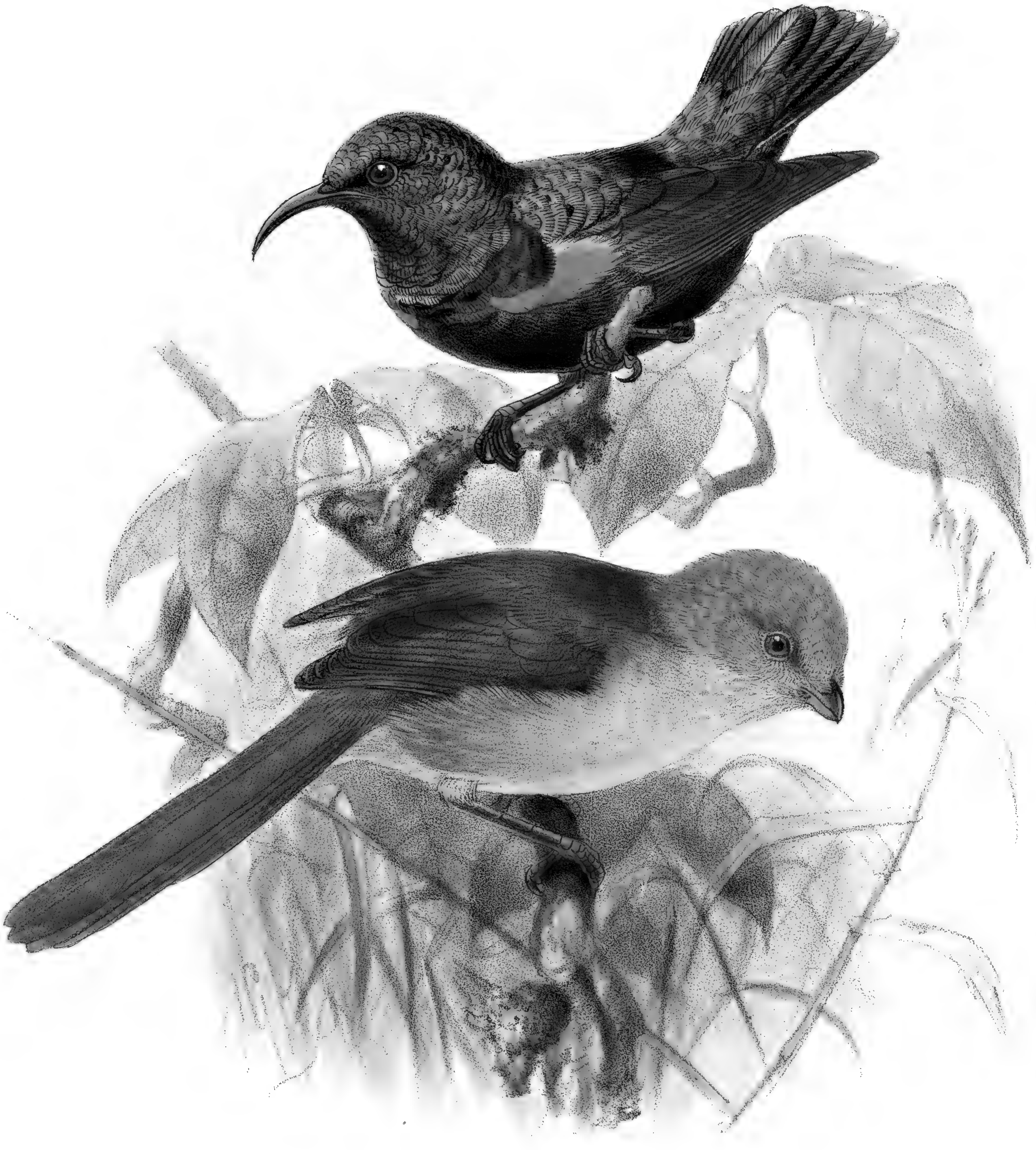
PTERUTHIUS ÆRALATUS, TICKELL.
CHLEUASICUS RUFICEPS, BLYTH.

Banks & Co. Edinr.

J. G. Keulemans lith.

CHATARRHŒA GULARIS, BLYTH.
ALCIPPE PHAYREI, BLYTH.

Banks & Co., Edinr.



J. G. Keulemans Lith.

ARACHNECHTHRA EDENI, ANDR.
SUTHORA BRUNNEA, ANDR.

Banks & Co., Edinʳ.

BIRDS.

YUNNAN EXPEDITIONS, PLATE I.

J. G. Keulemans lith.

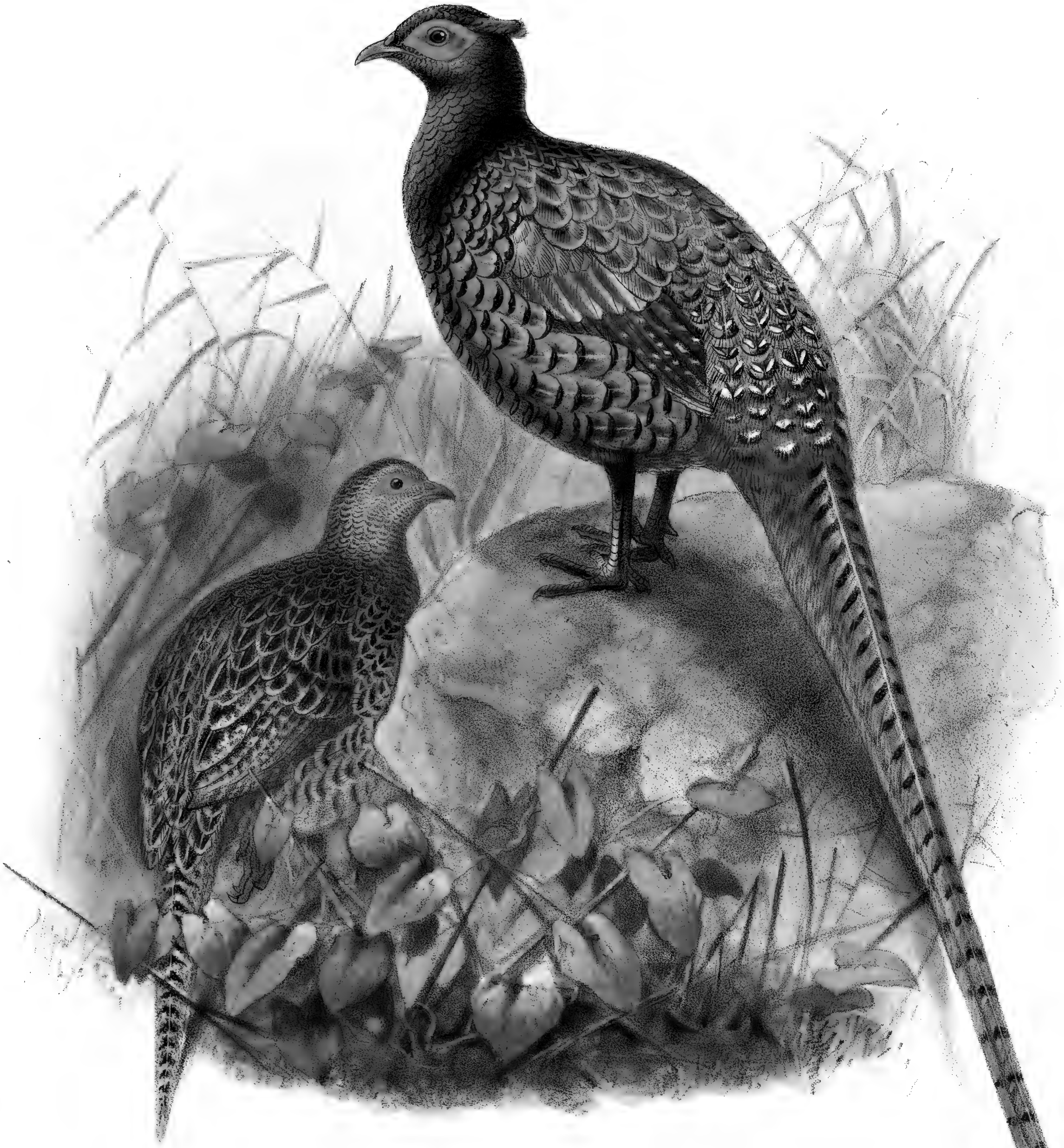
HYPSIPETES YUNNANENSIS, ANDR.
CULCIPETA TEPHROCEPHALA, ANDR.

Banks & Co. Edinr

[illegible]

SUYA SUPERCILIARIS, ANDR.
PYCNONOTUS XANTHORRHOUS, ANDR.

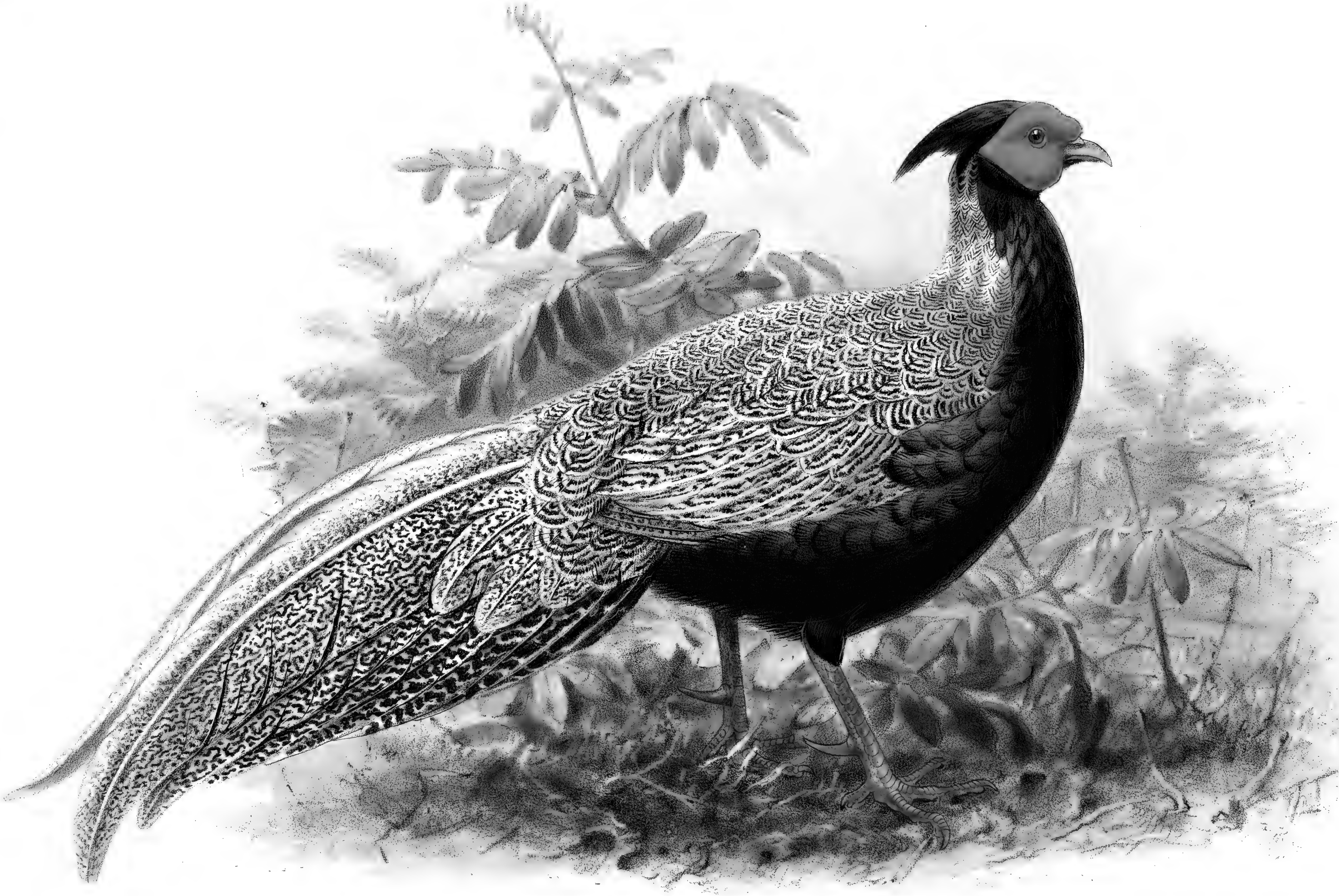
[illegible]



J. G. Keulemans lith.

PHASIANUS SLADENI, ANDR. ♂ & ♀

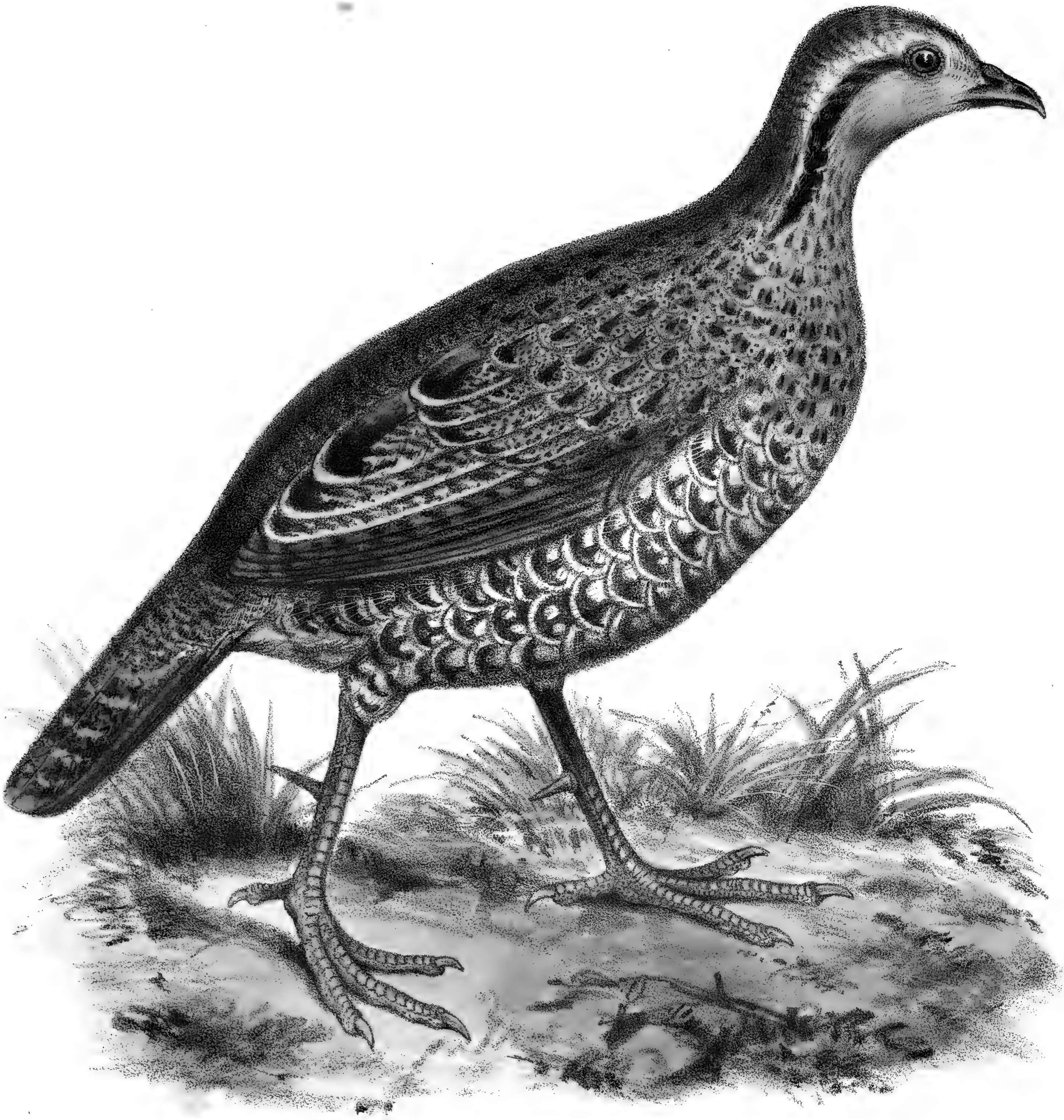
Banks & Co., Edinr.



J. G. Keulemans lith.

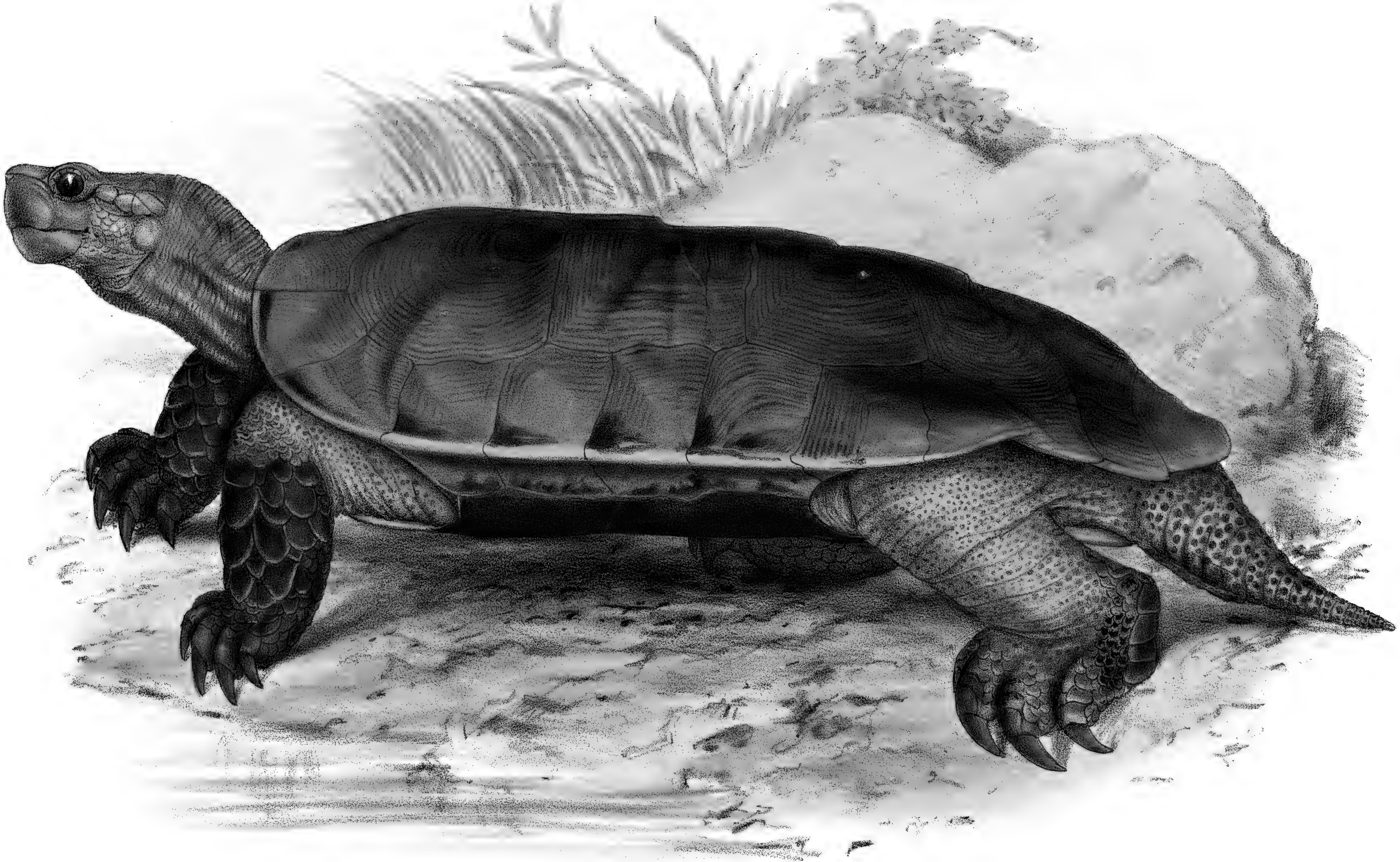
Banks & Co. Edinr.

EUPLOCAMUS ANDERSONI, ELLIOTT. ♂.



C. Berjeau, Lith. Banks & Co., Edinr.

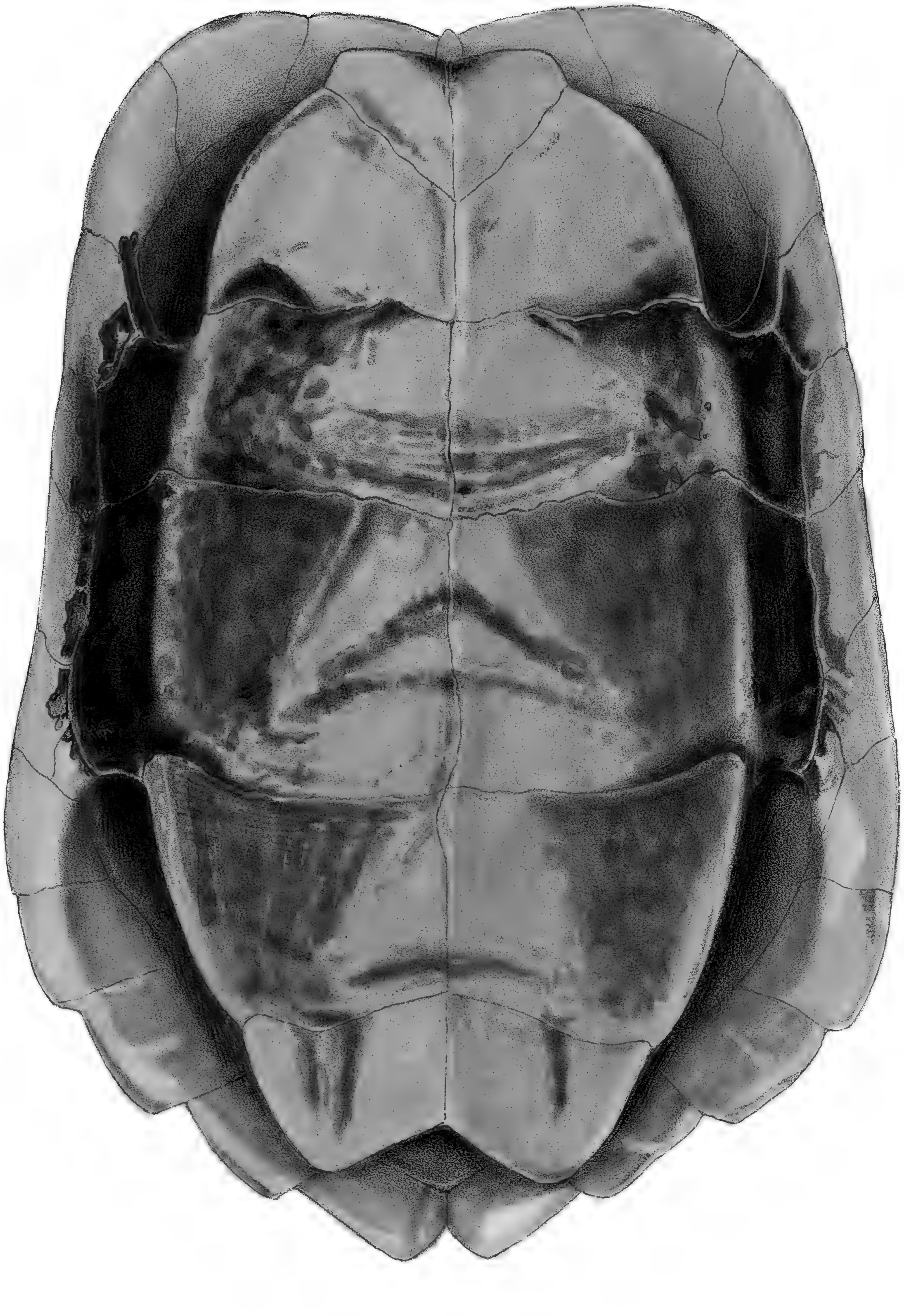
BAMBUSICOLA FYTCHII, ANDR. ♂.



C. Berjeau. Lith.

Banks & Co. Edinr.

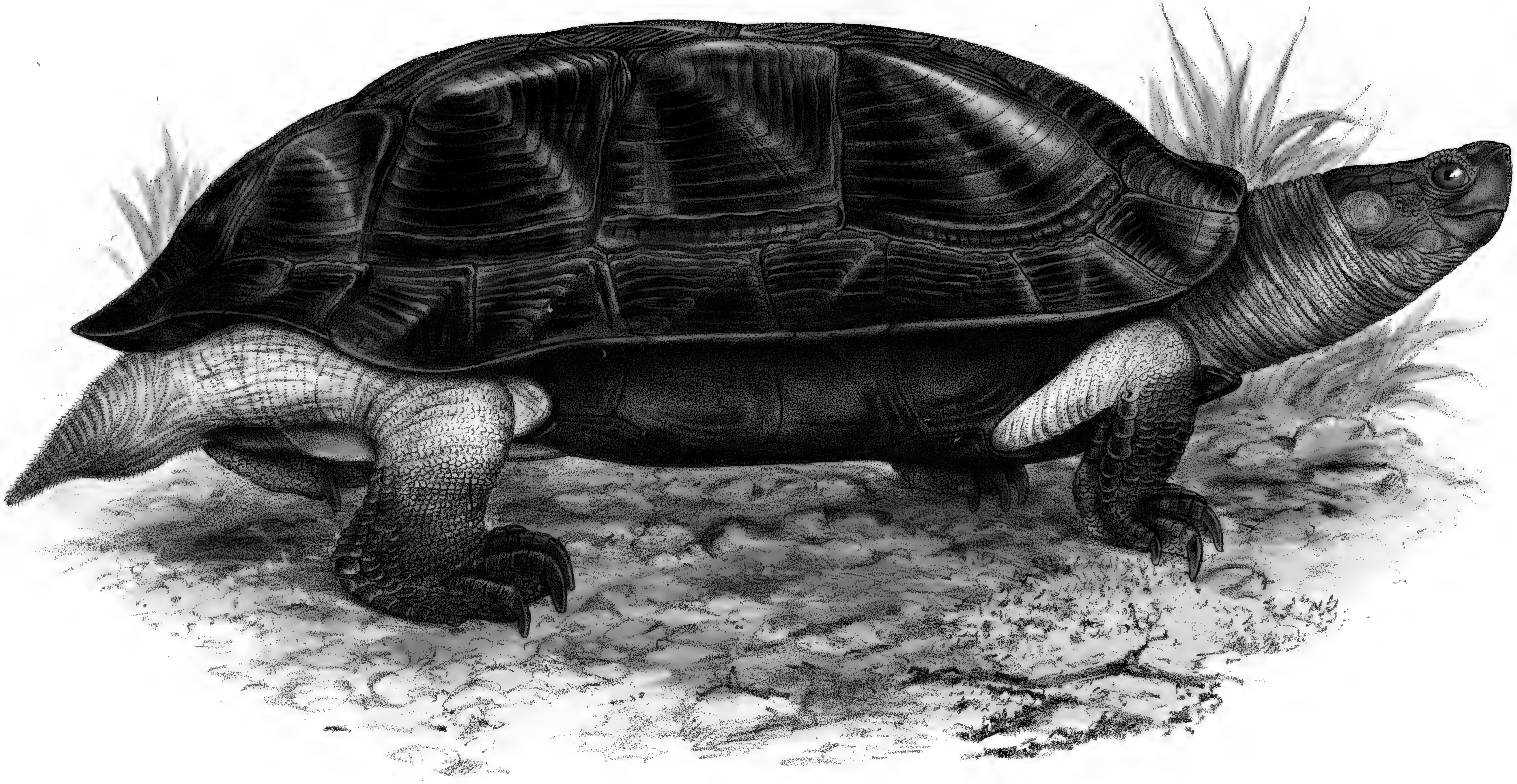
GEOEMYDA DEPRESSA, ANDR. ♂ ¾ *Nat Size.*



J. Bequet [illegible]

GEOEMYDA DEPRESSA, ANDR. ♂ 3/4 *Nat. Size.*

Banks & Co., Edinr.



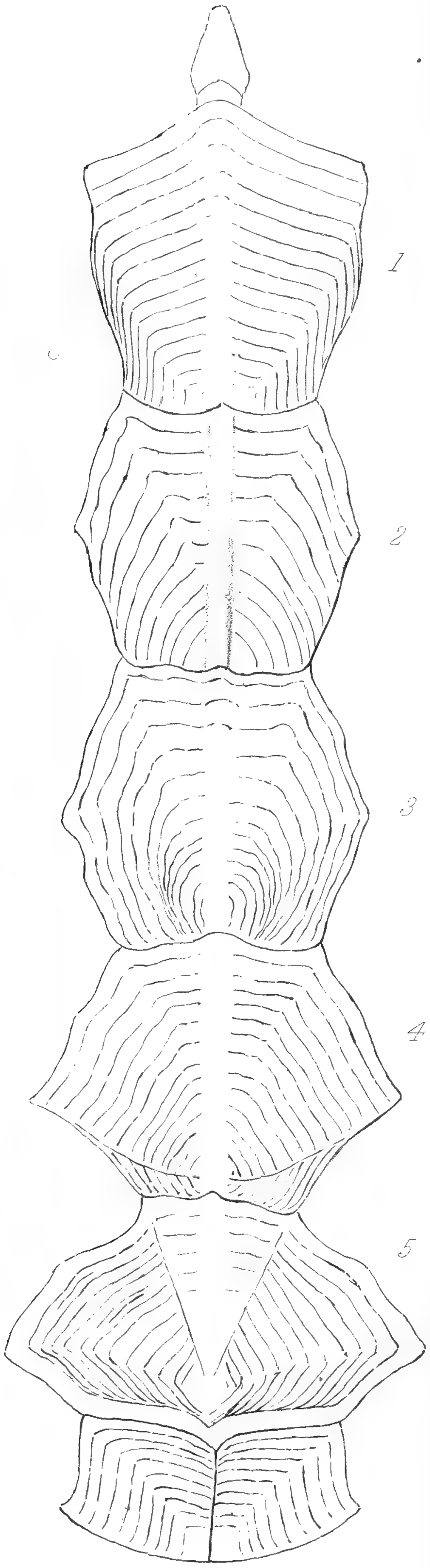
EMYS TRIJUGA, SCHWEIGGER.
VAR. BURMANA.

C. Berjeau, Lith.

Banks & Co., Edinr.

Fig. 1

Fig. 2

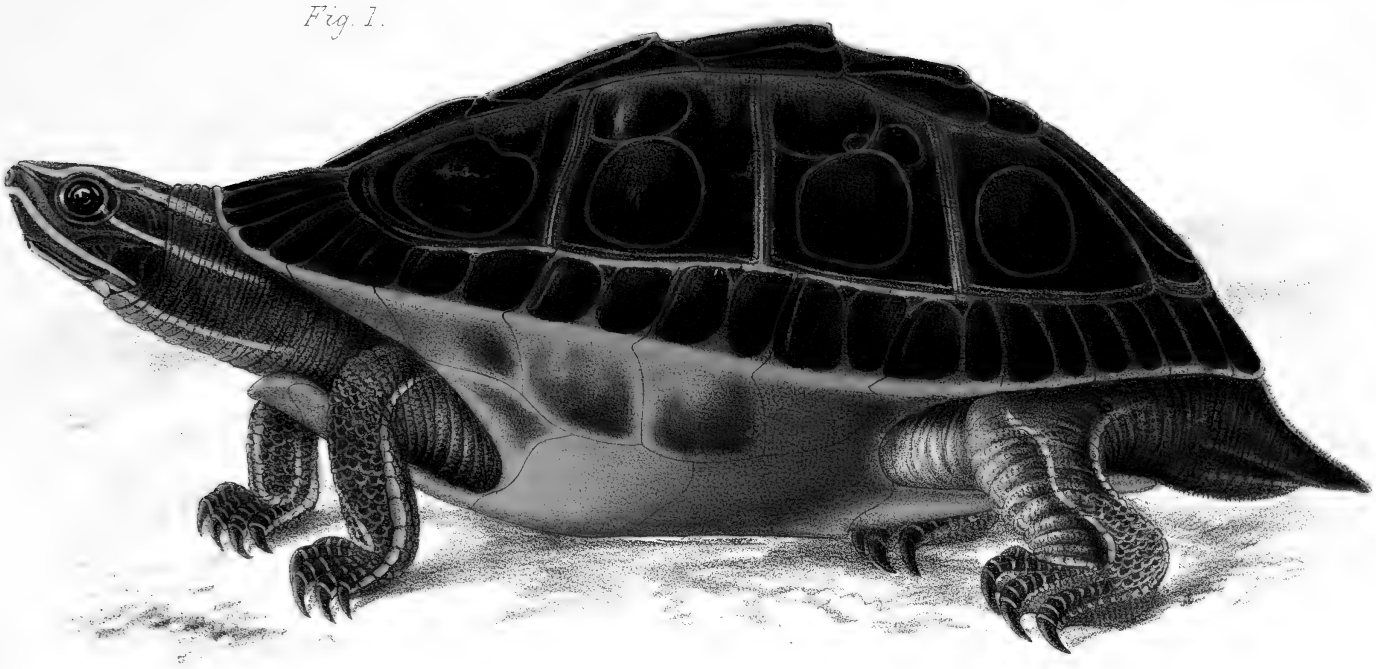


EMYS TRIJUGA, SCHWEIGGER.
VAR. BURMANA.

Berjeau. Lith.

Banks & Co., Edinr.

Fig. 1.



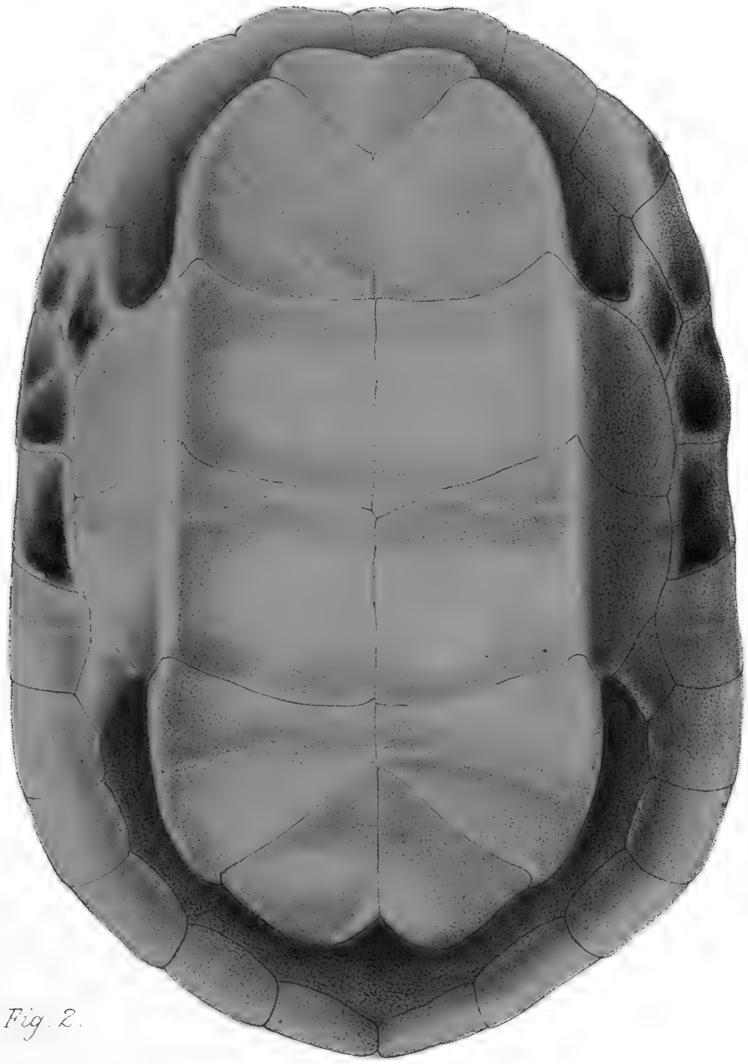
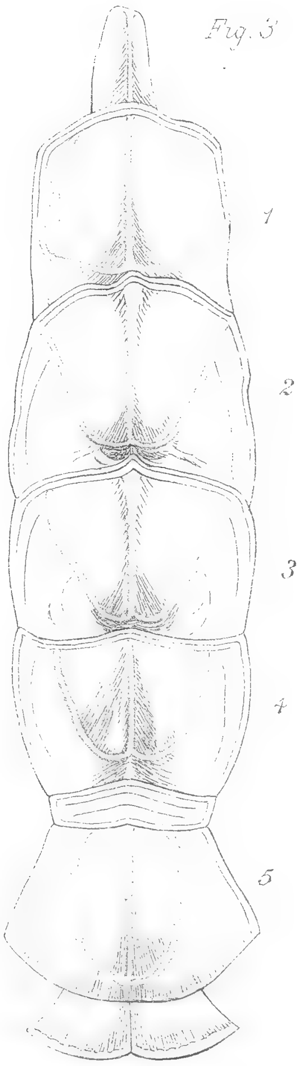


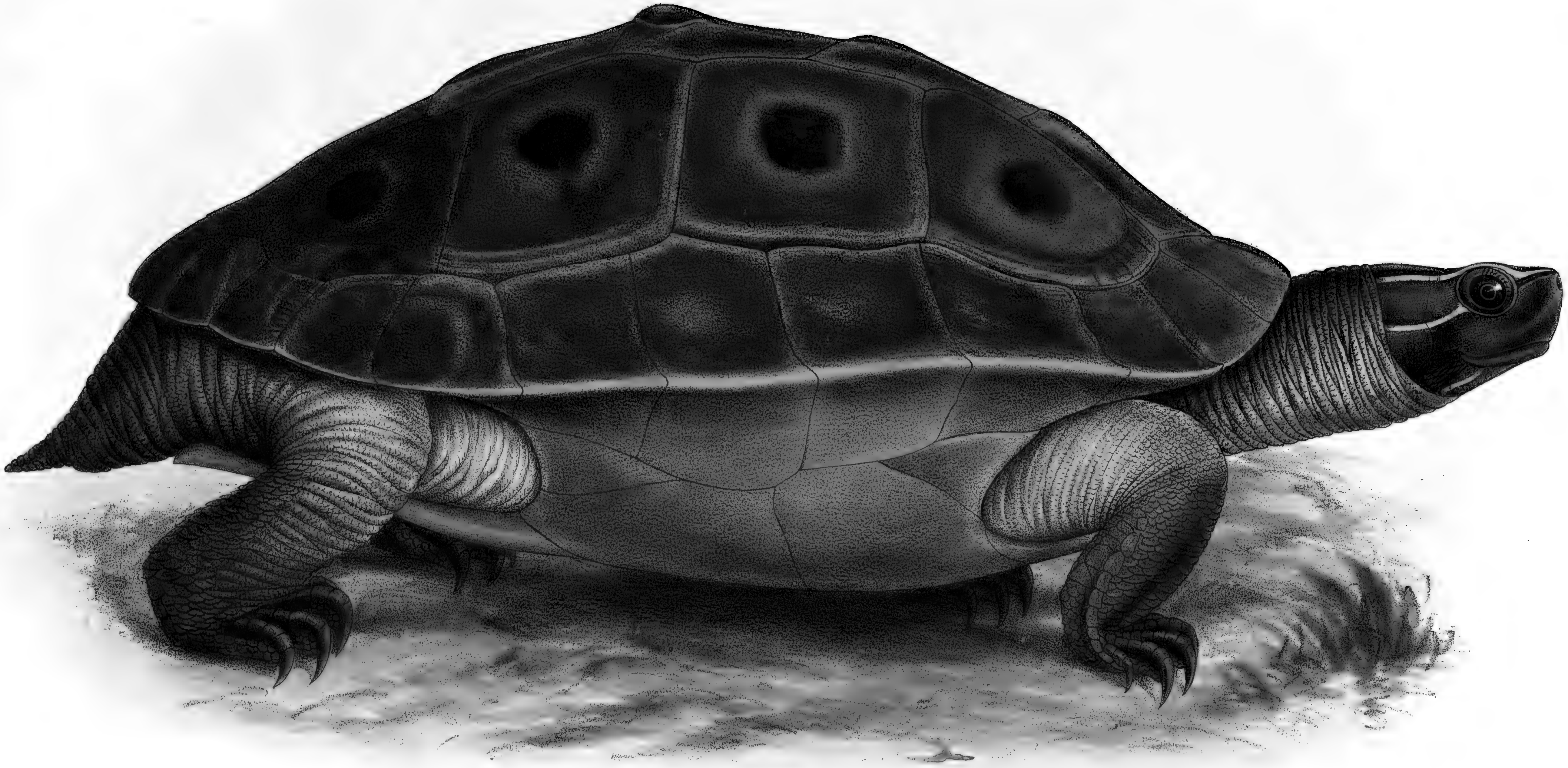
Fig. 2.

Fig. 3.



C.Berjeau lith. M&N.Hanhart imp.

EMYS (MORENIA) PETERSI. ANDR.

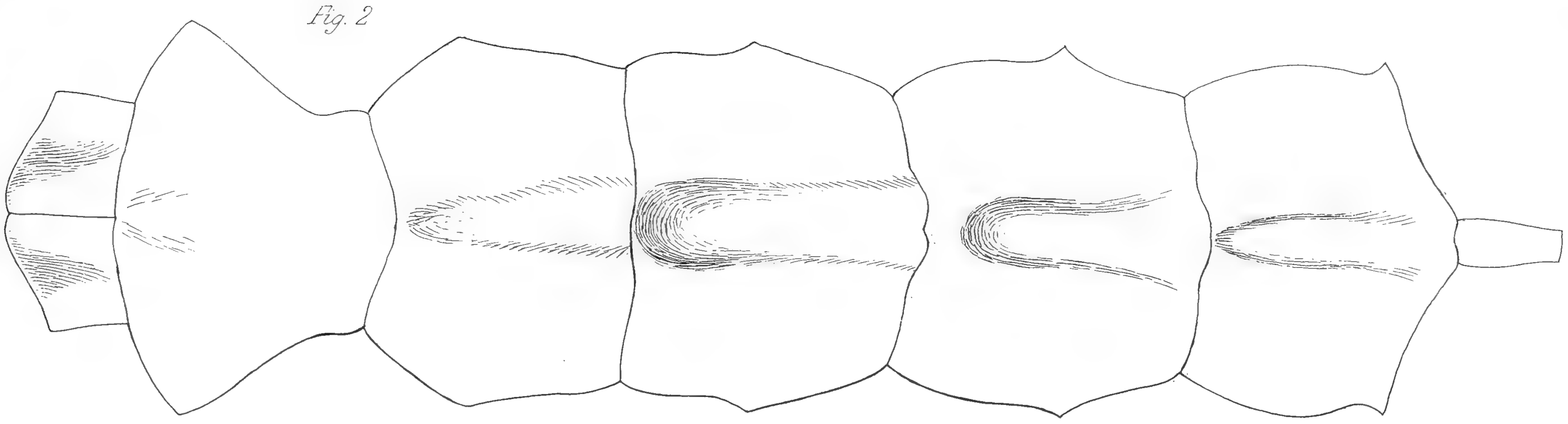


C. Perjeau, Lith.

EMYS (MORENIA) OCELLATA

Banks & Co. Edin^r

Fig. 2



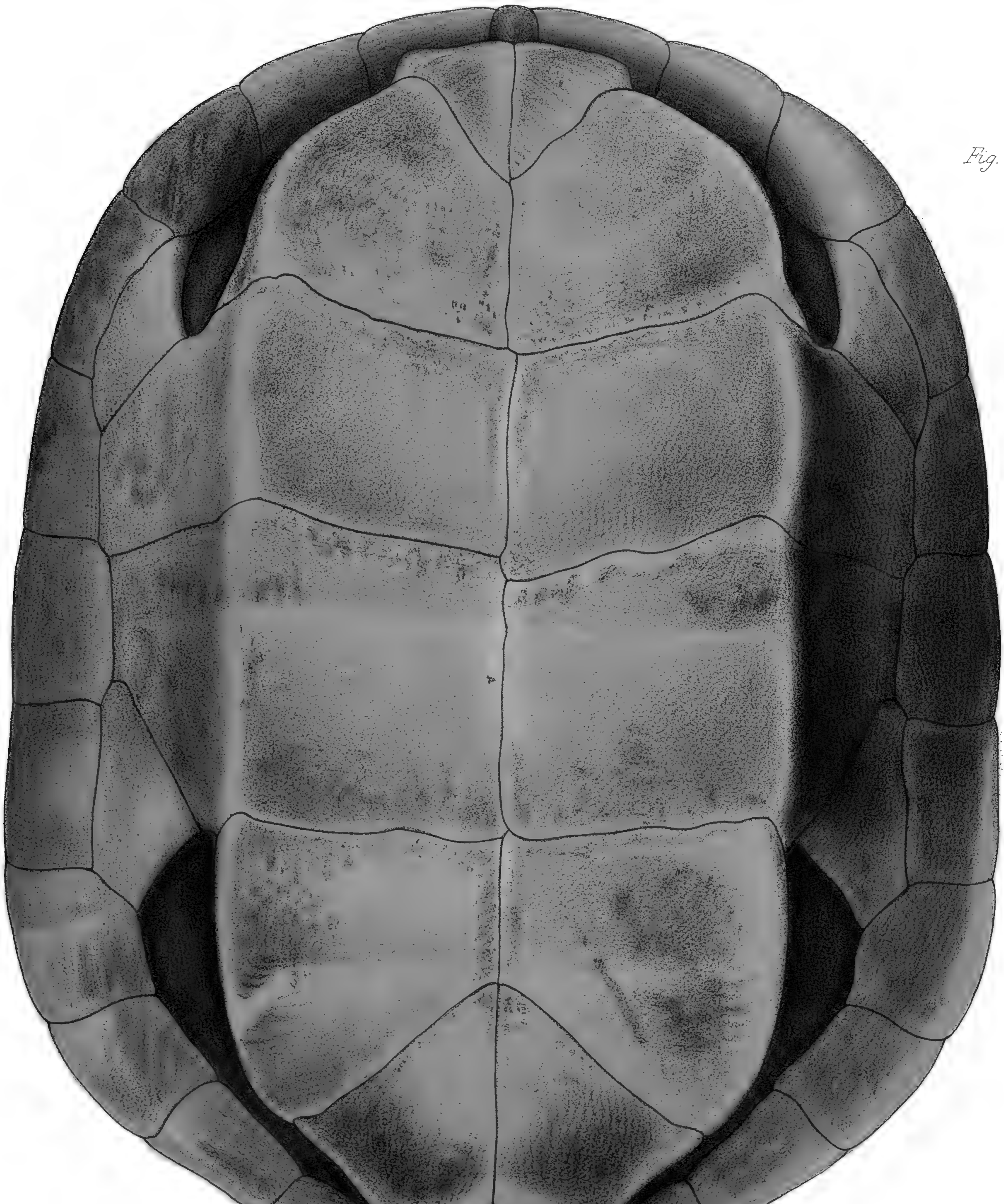


Fig. 1

C. Berjeau, Lith.

EMYS (MORENIA) OCELLATA

Banks & Co., Edinr

Fig. 2

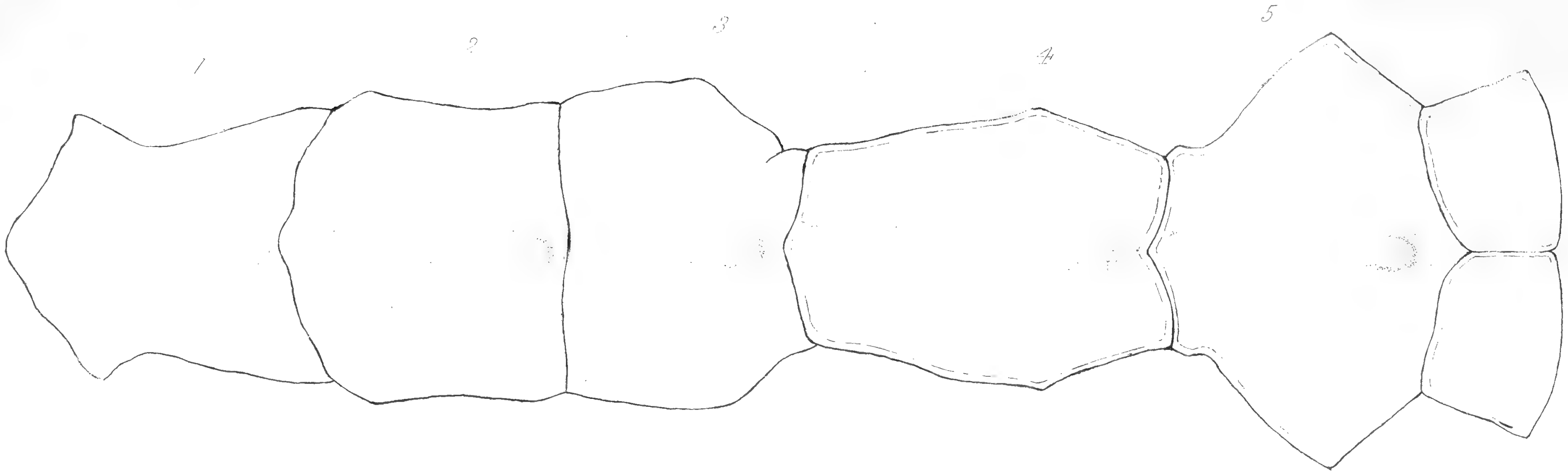
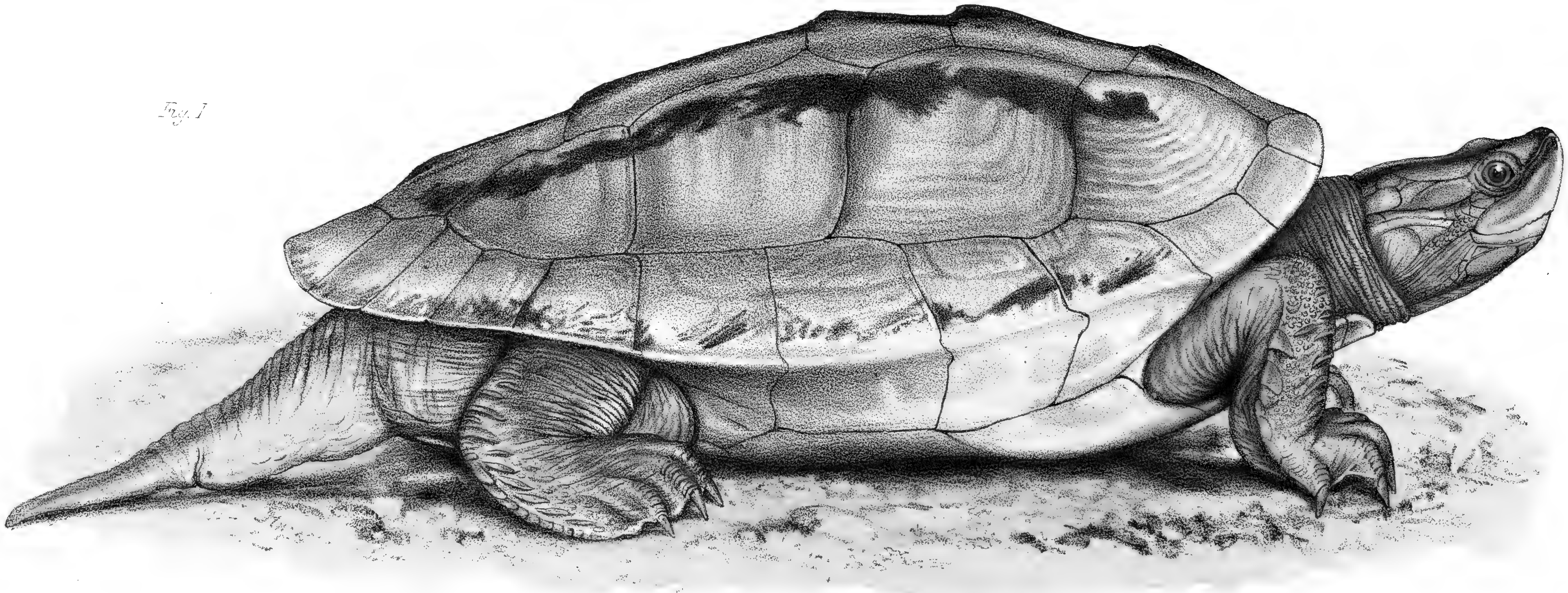


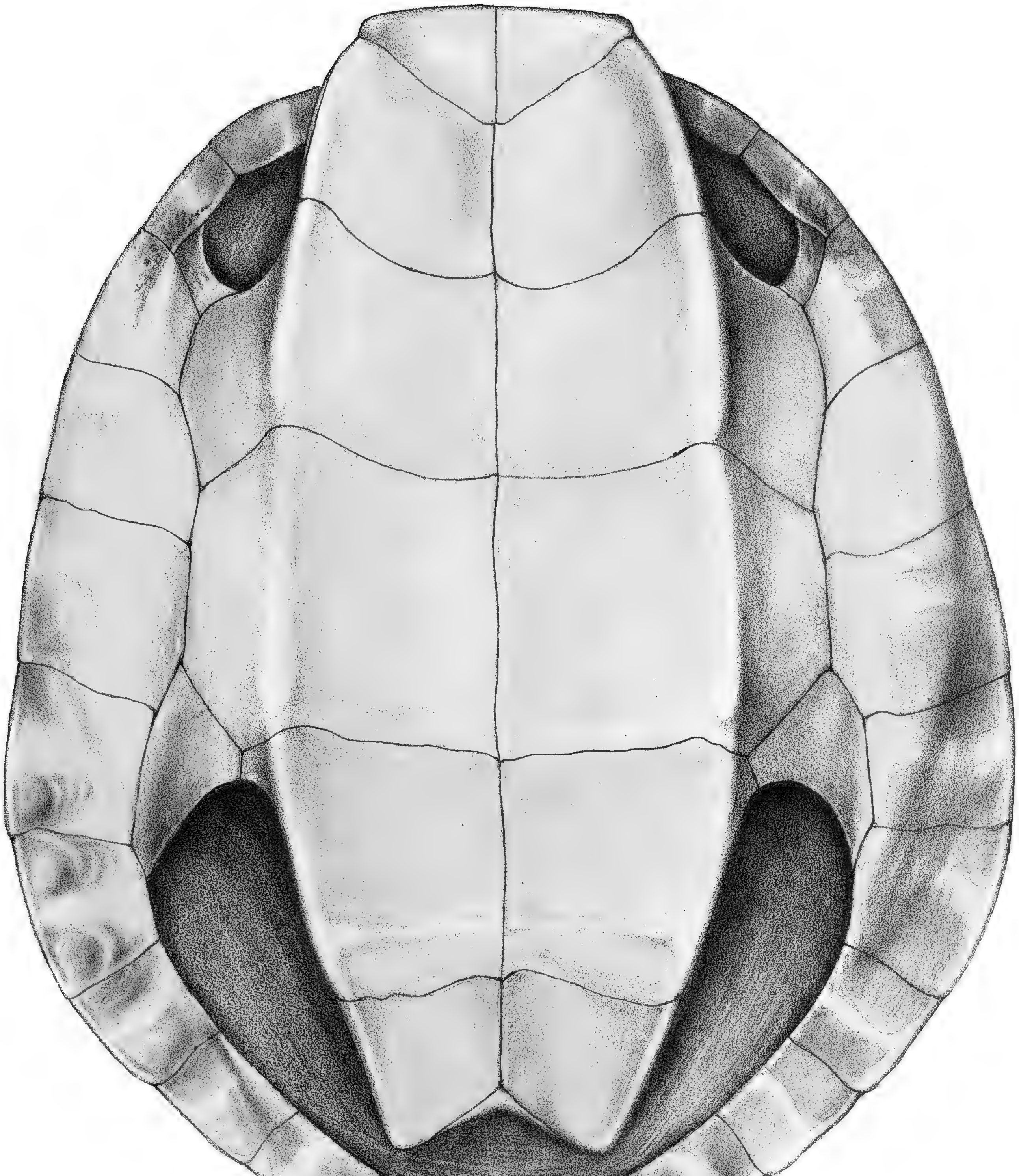
Fig. 1



C. Berjeau, Lith.

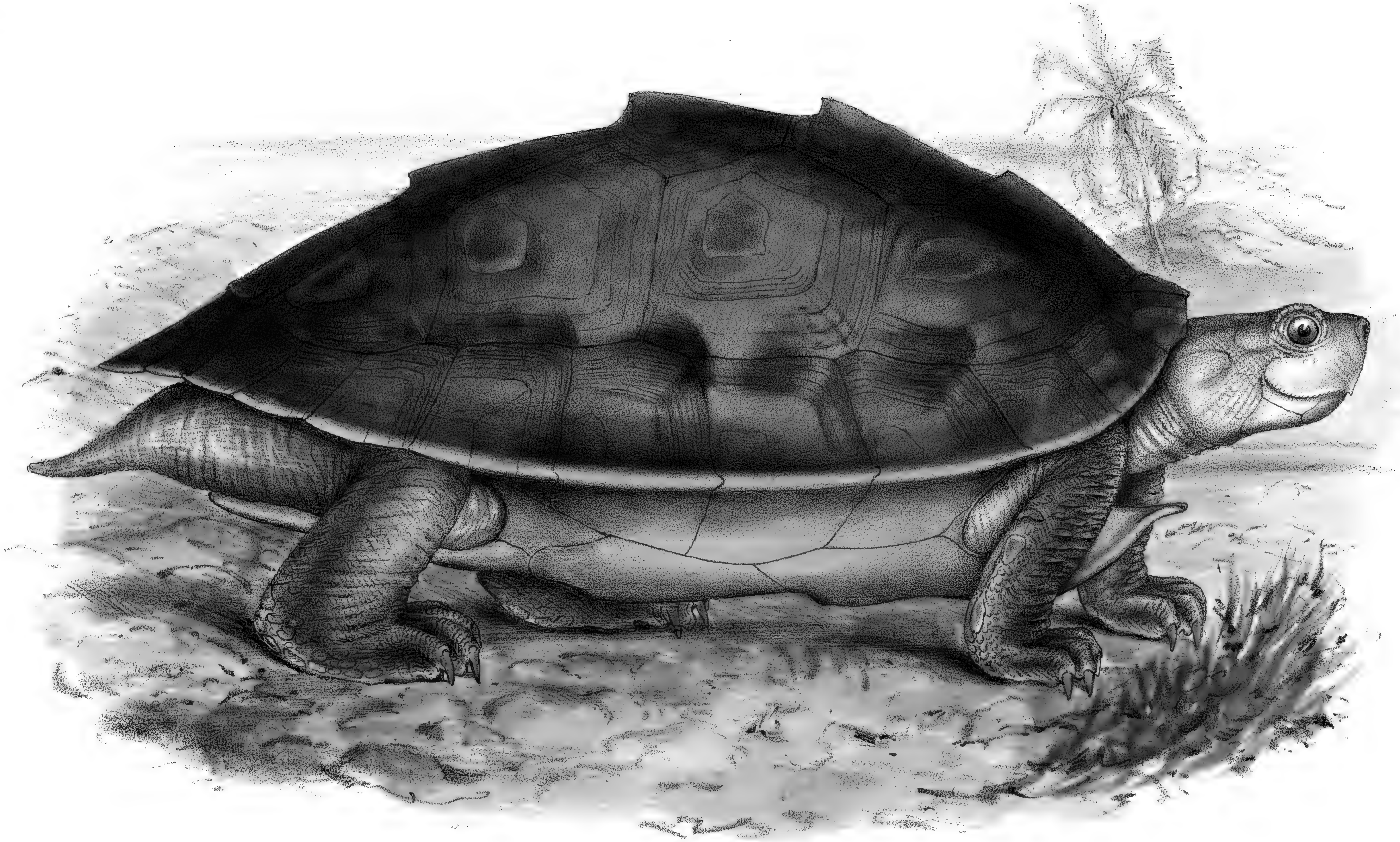
Banks & Co. Edinr.

BATAGUR TRIVITTATA, ♂, DUMERIL.



C. Berjeau. Lith

Banks & Co. Edin^{r}



C. Berjeau lith.

Banks & Co., Edinr.

Fig. 1

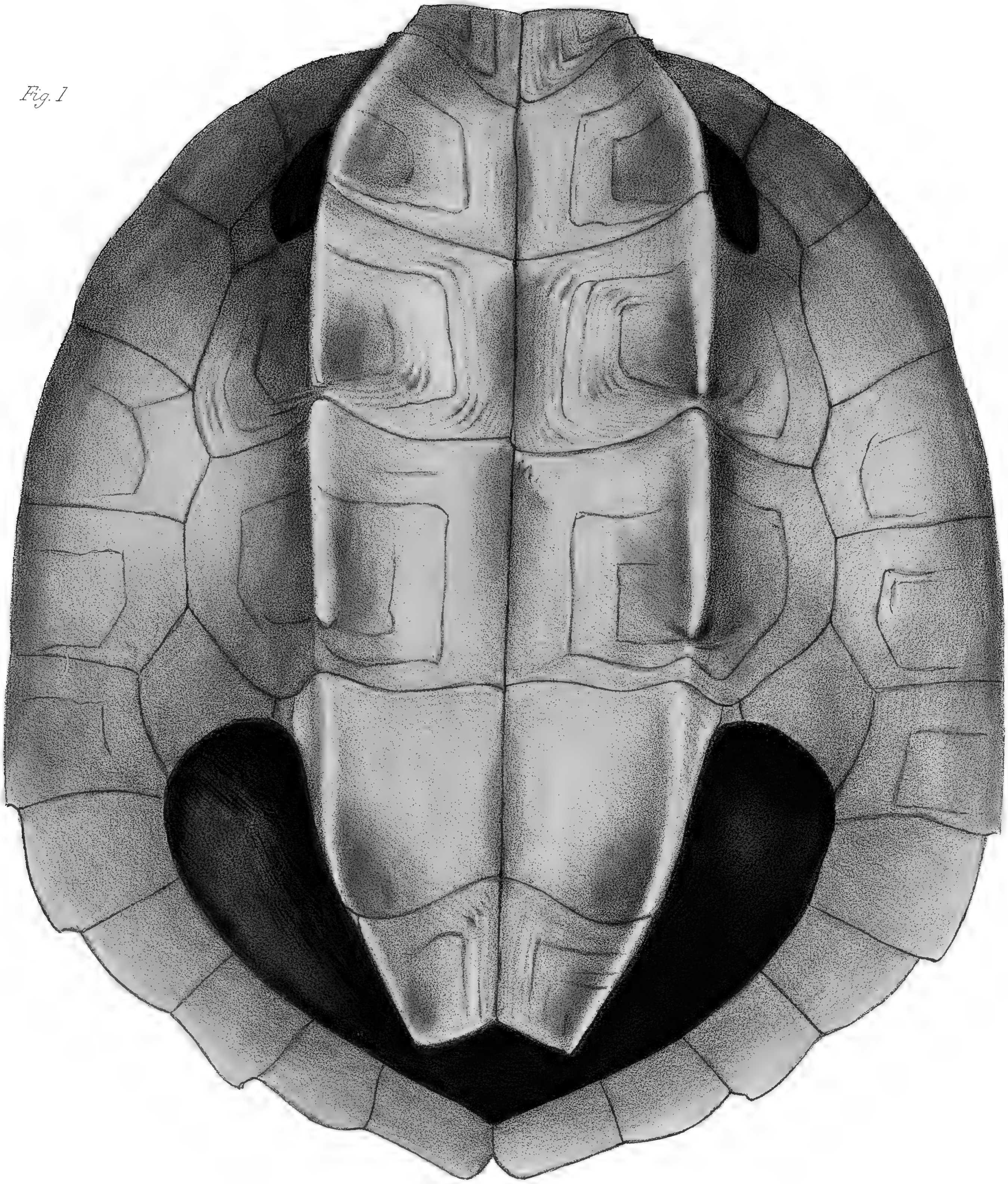
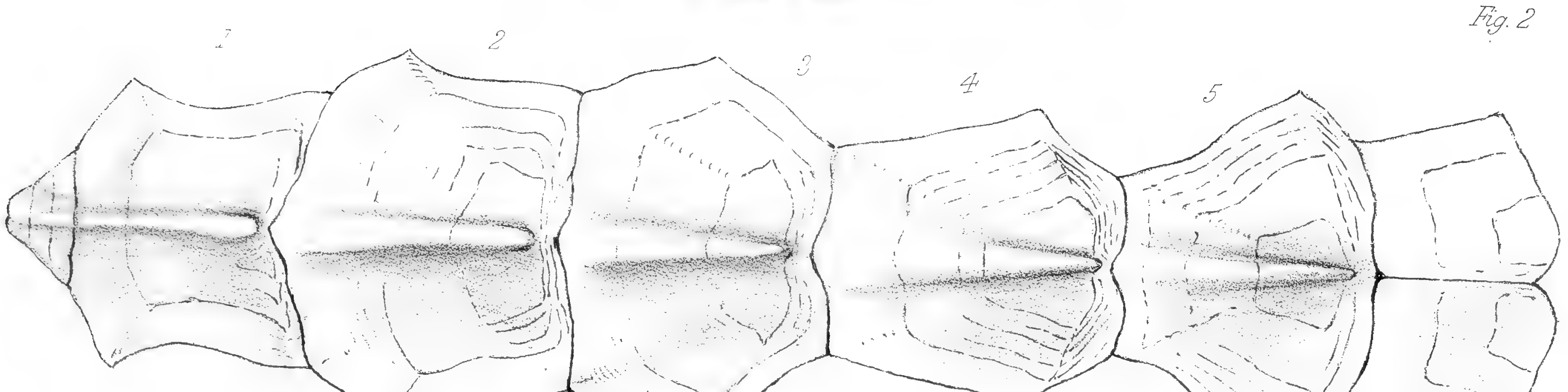
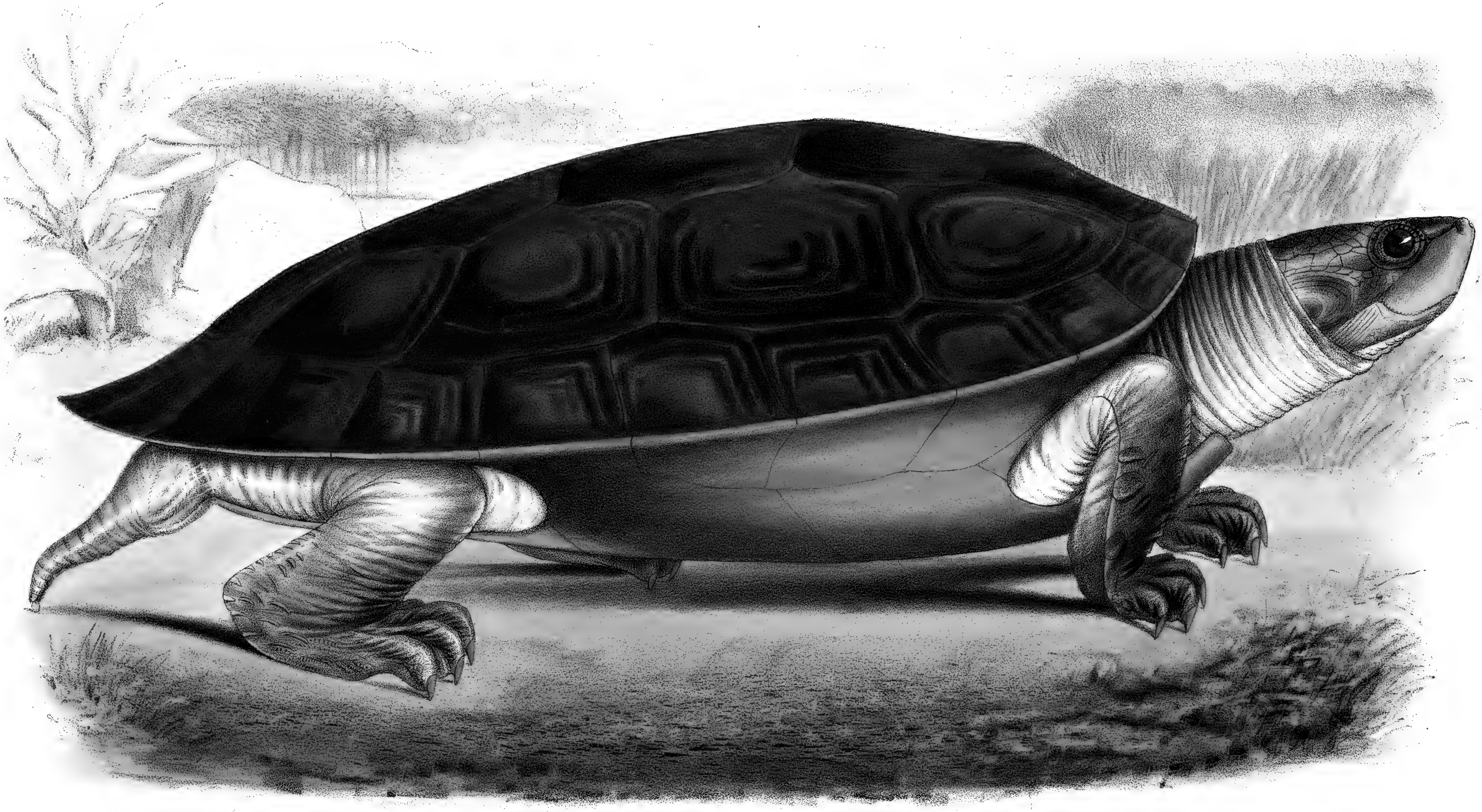


Fig. 2



[illegible]

[illegible] & Co. Lond.



C. Berjeau, Lith.

Banks & Co., Edin^r

Fig. 1

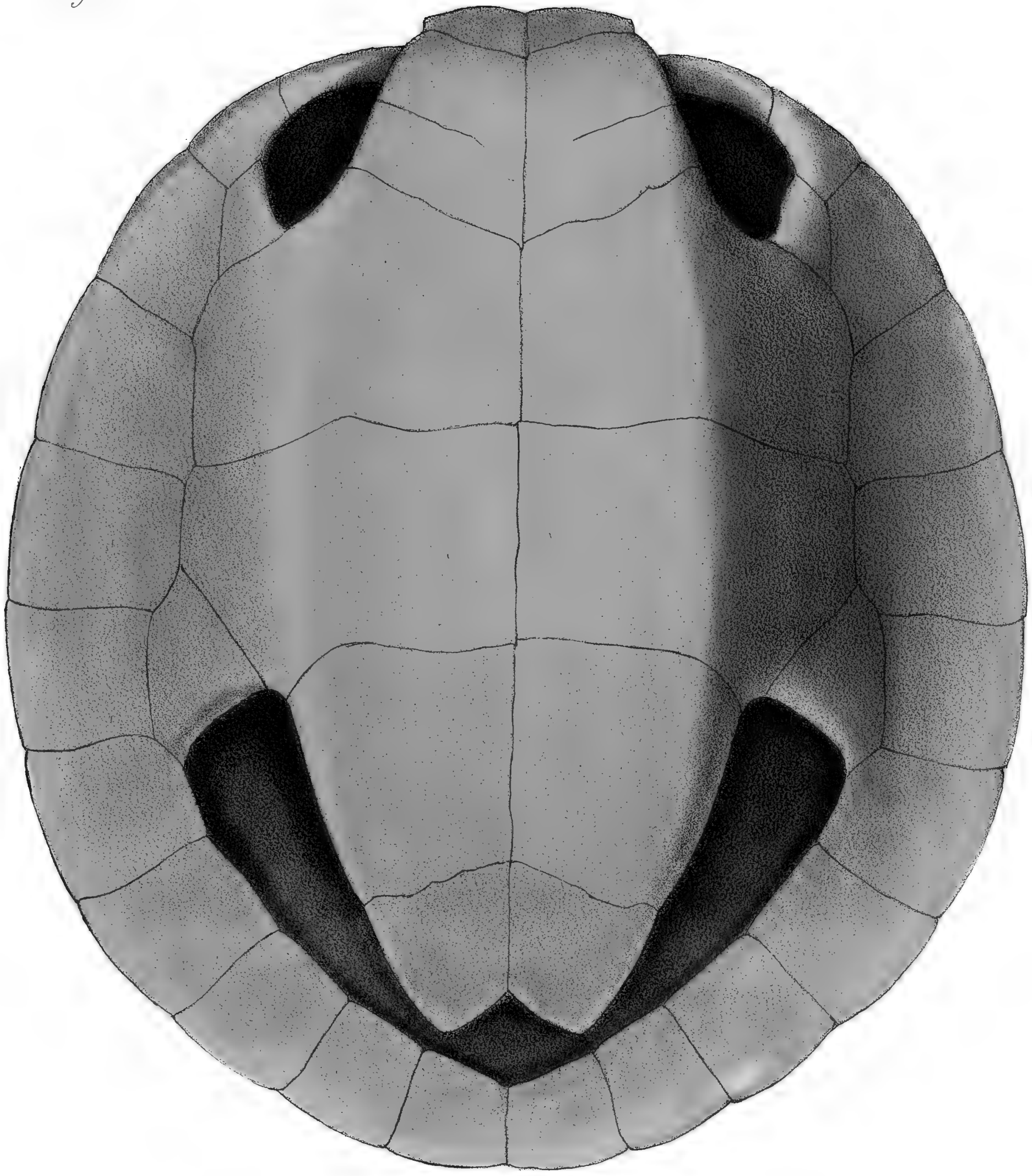
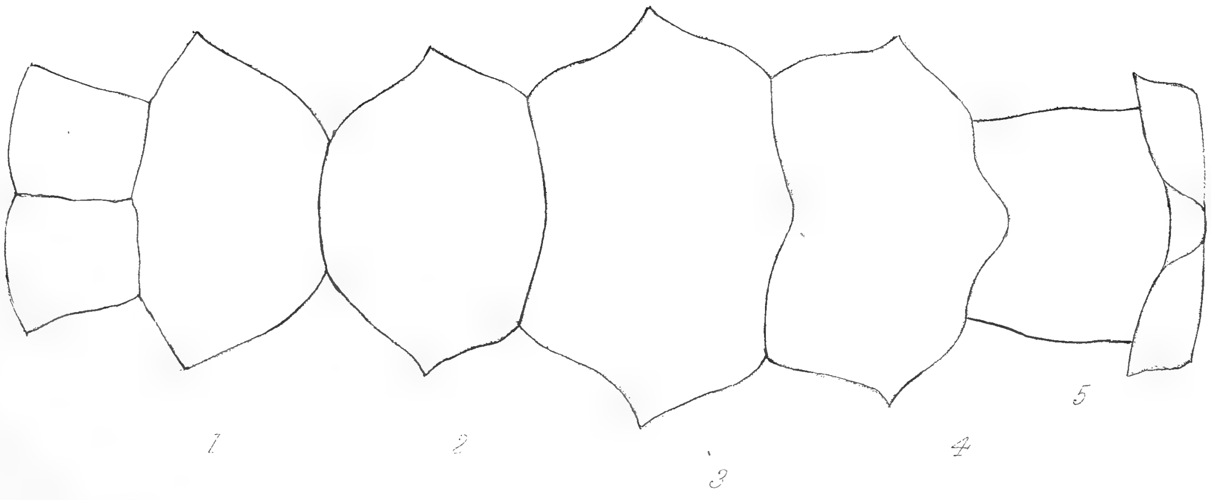
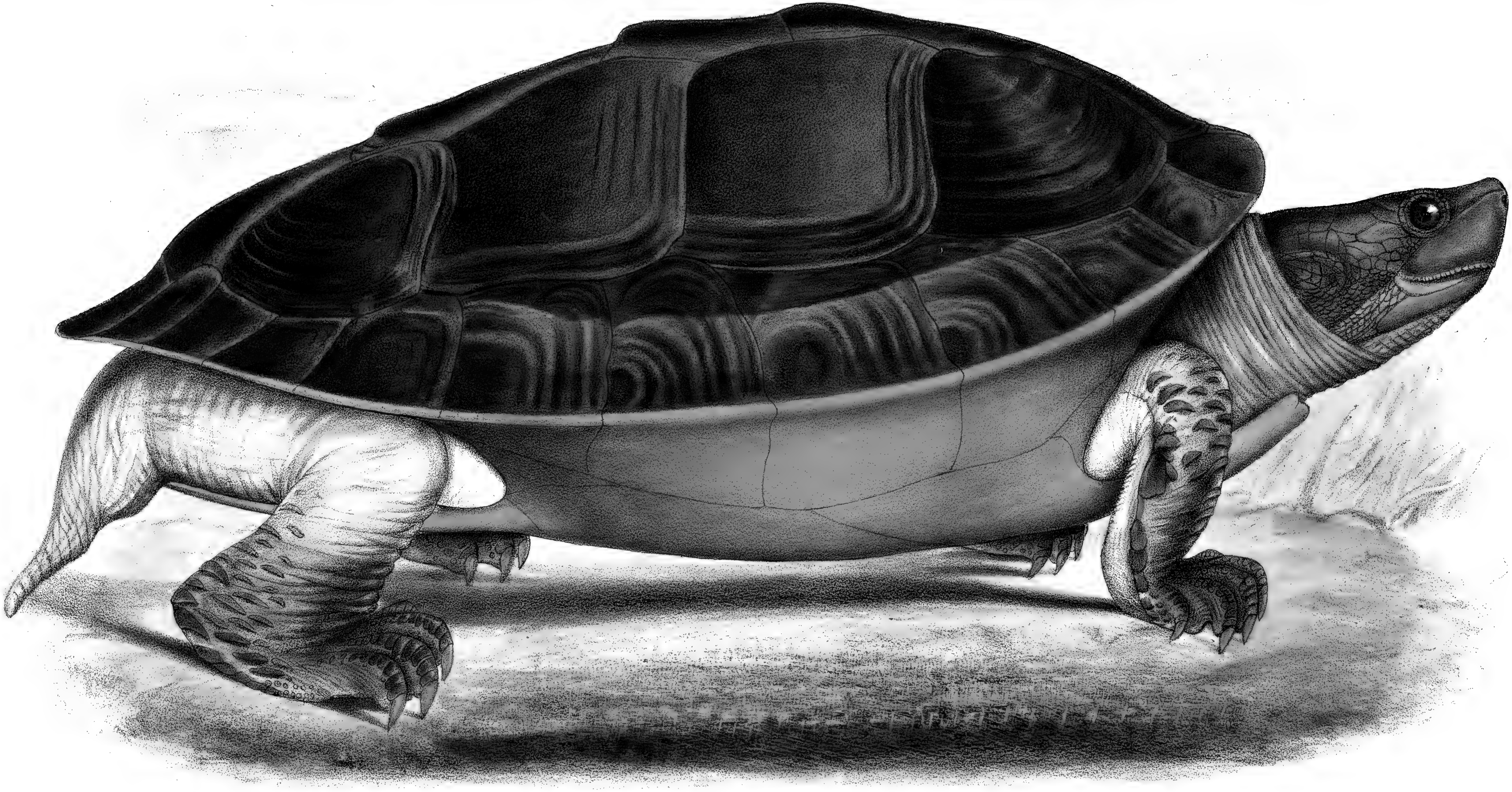


Fig. 2



C. Berjeau, Lith.

Banks & Co., Edinr.



C. Berjeau, Lith.

[illegible]

BATAGUR TRIVITTATA, ♀, DUMÉRIL.

Fig. 1

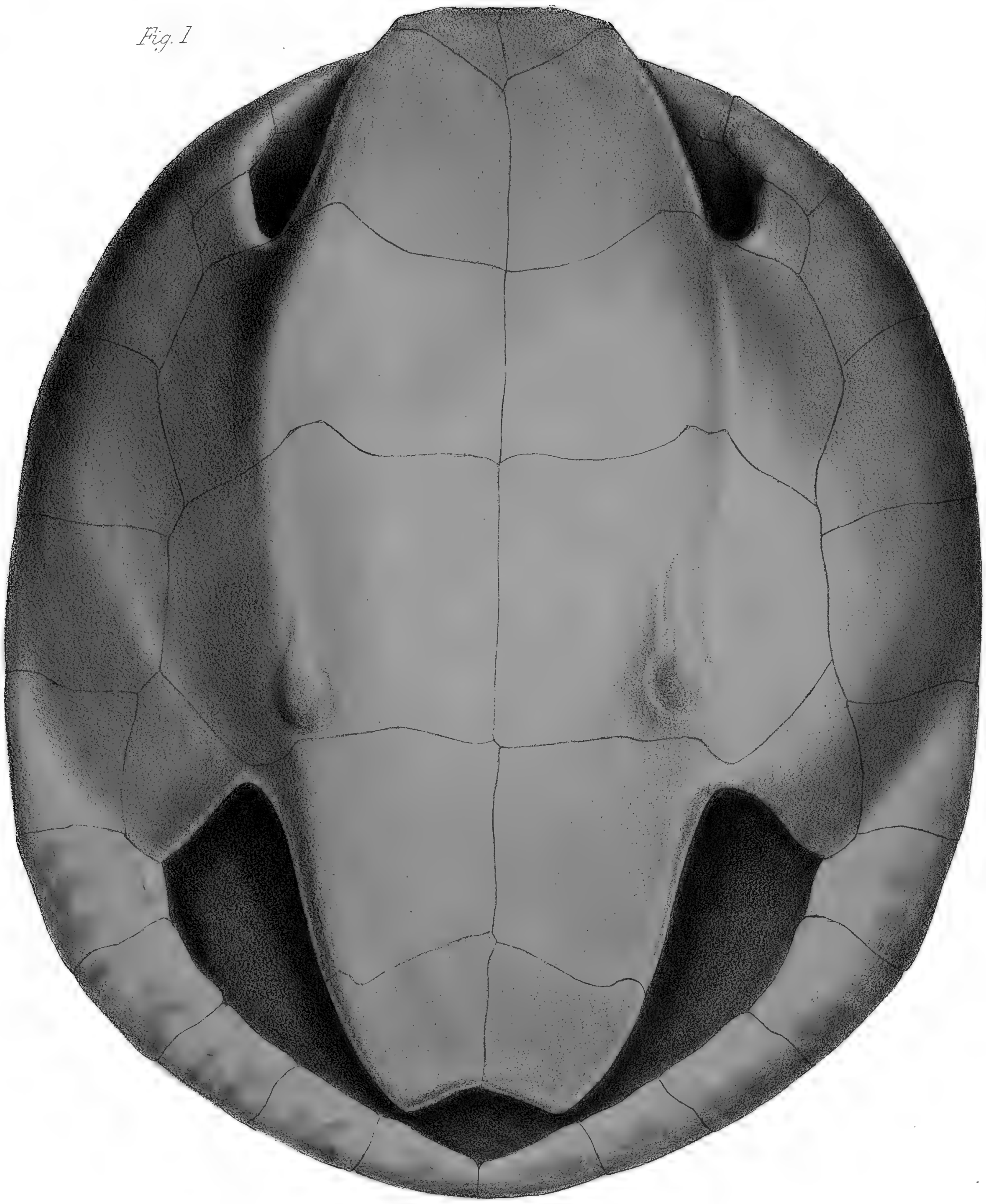
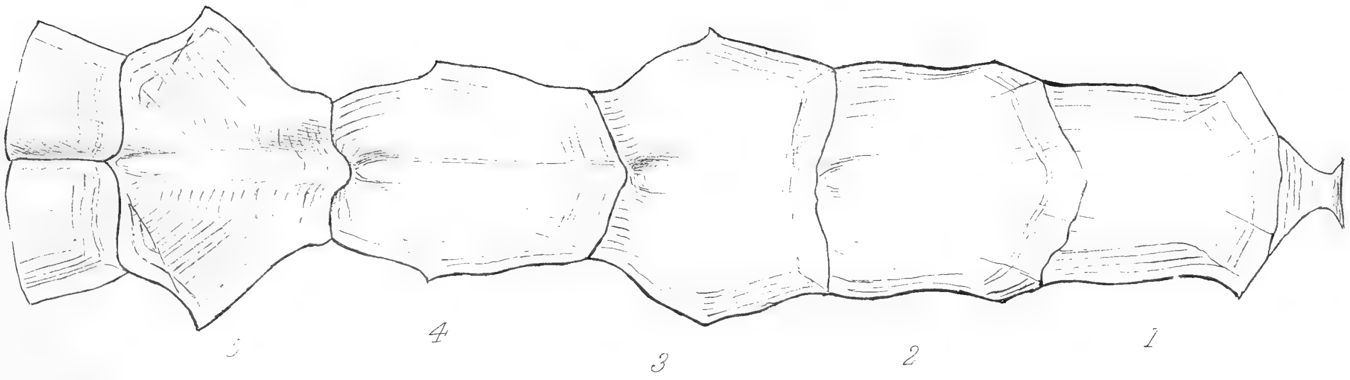


Fig. 2



C. Berjeau. Lith.

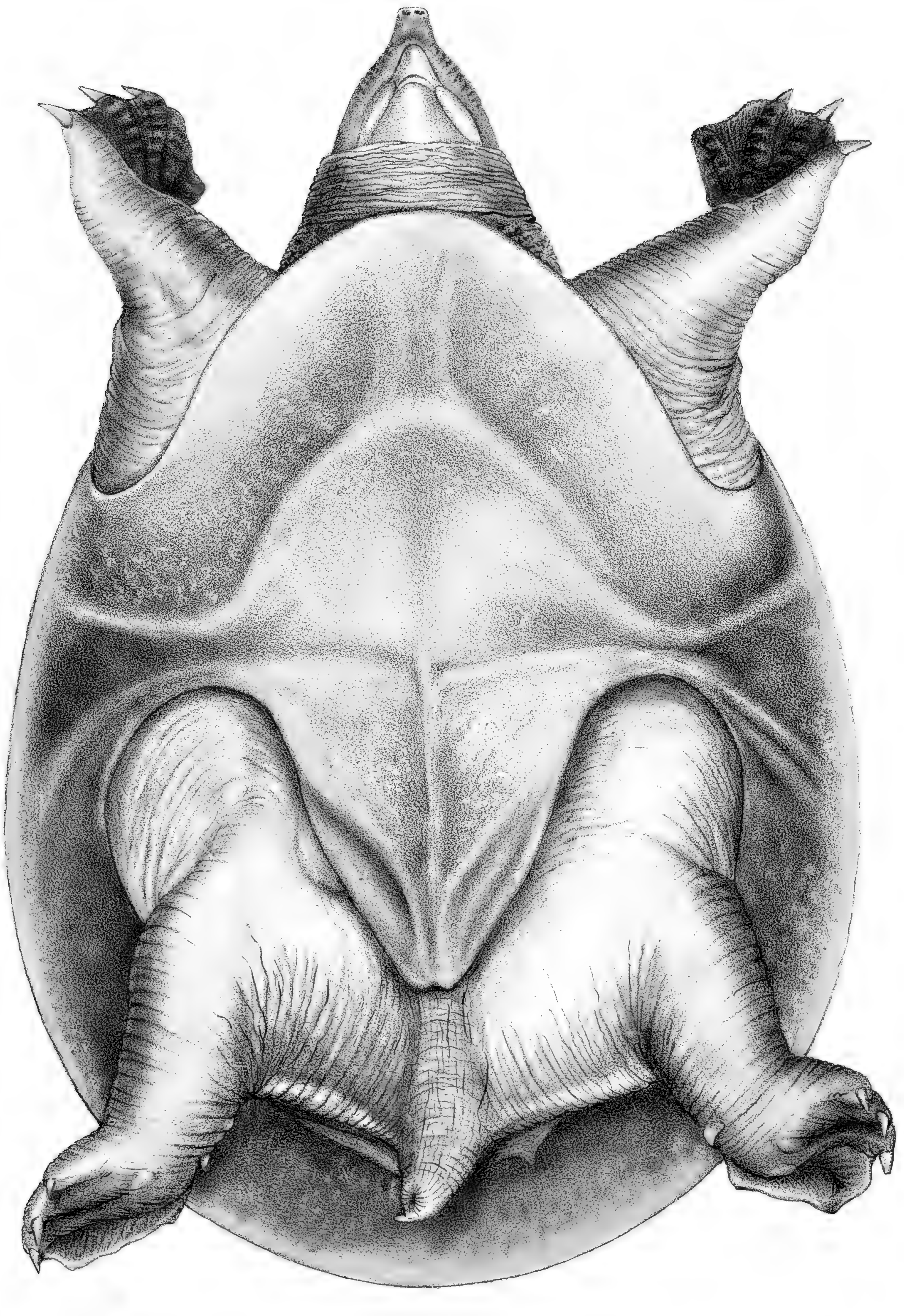
Banks & Co., Edinr.

BATAGUR TRIVITTATA, ♀, DUMERIL.

C. Berjeau Lith

Banks & Co., Edinr.

TRIONYX PEGUENSIS, GRAY. (YOUNG) *Nat Size.*



[illegible] Lith.

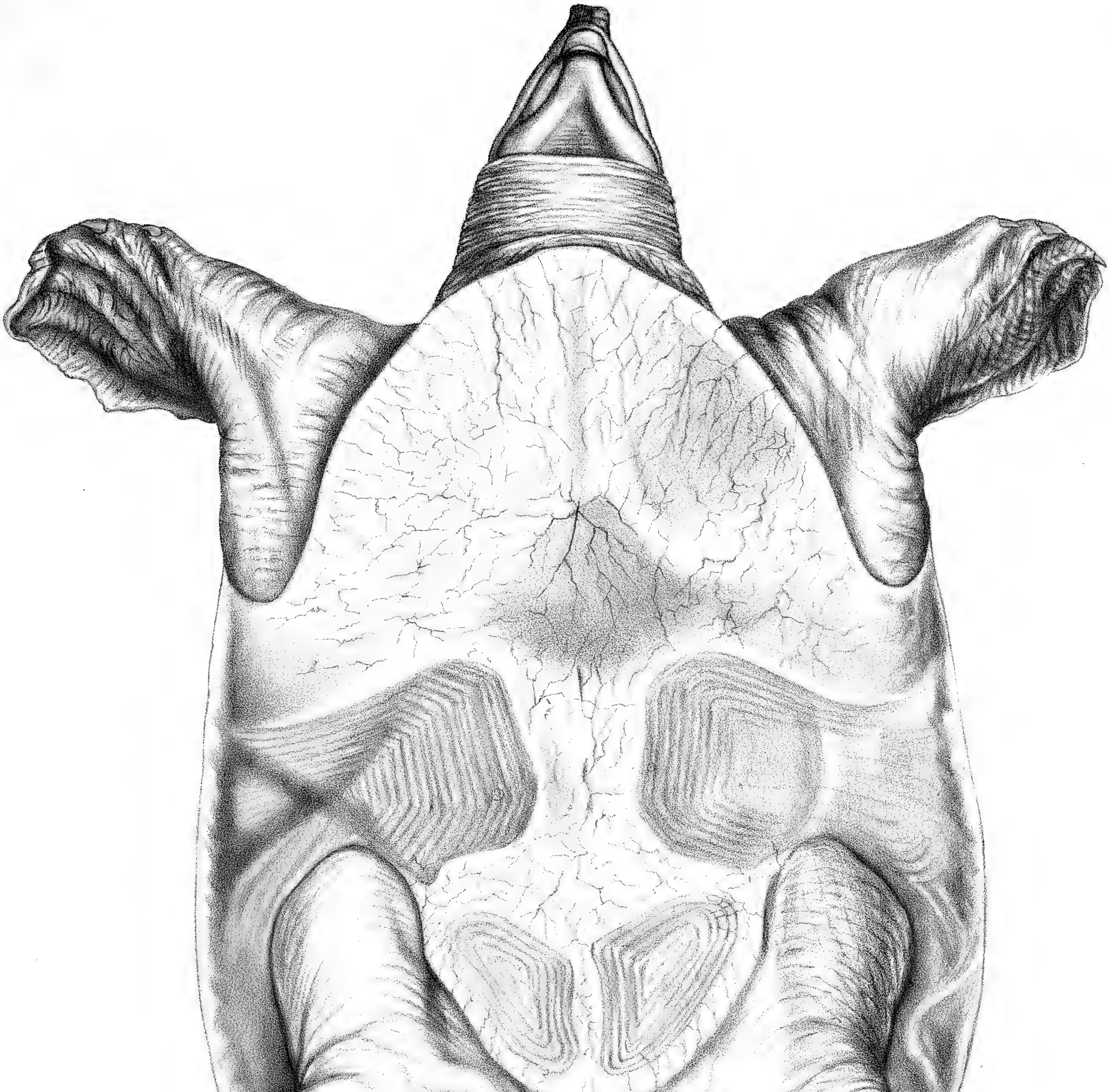
Banks & Co. Edin^r

TRIONYX PEGUENSIS, GRAY. (YOUNG.) *Nat. Size.*

C. Berjeau, Lith.

Banks & Co. Edin^r

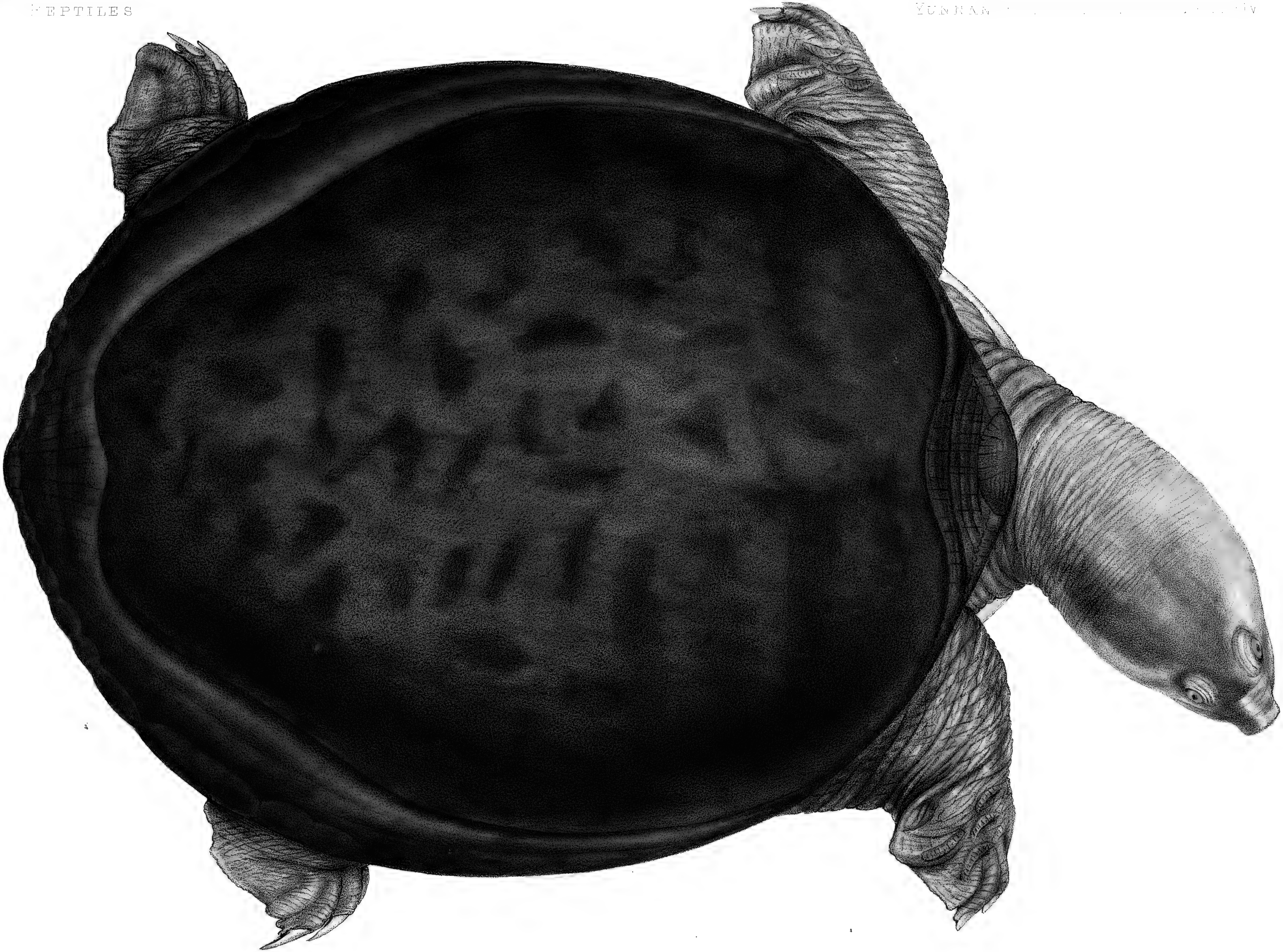
TRIONYX PEGUENSIS, GRAY, (ADULT)



G. Berjeau, Lith.

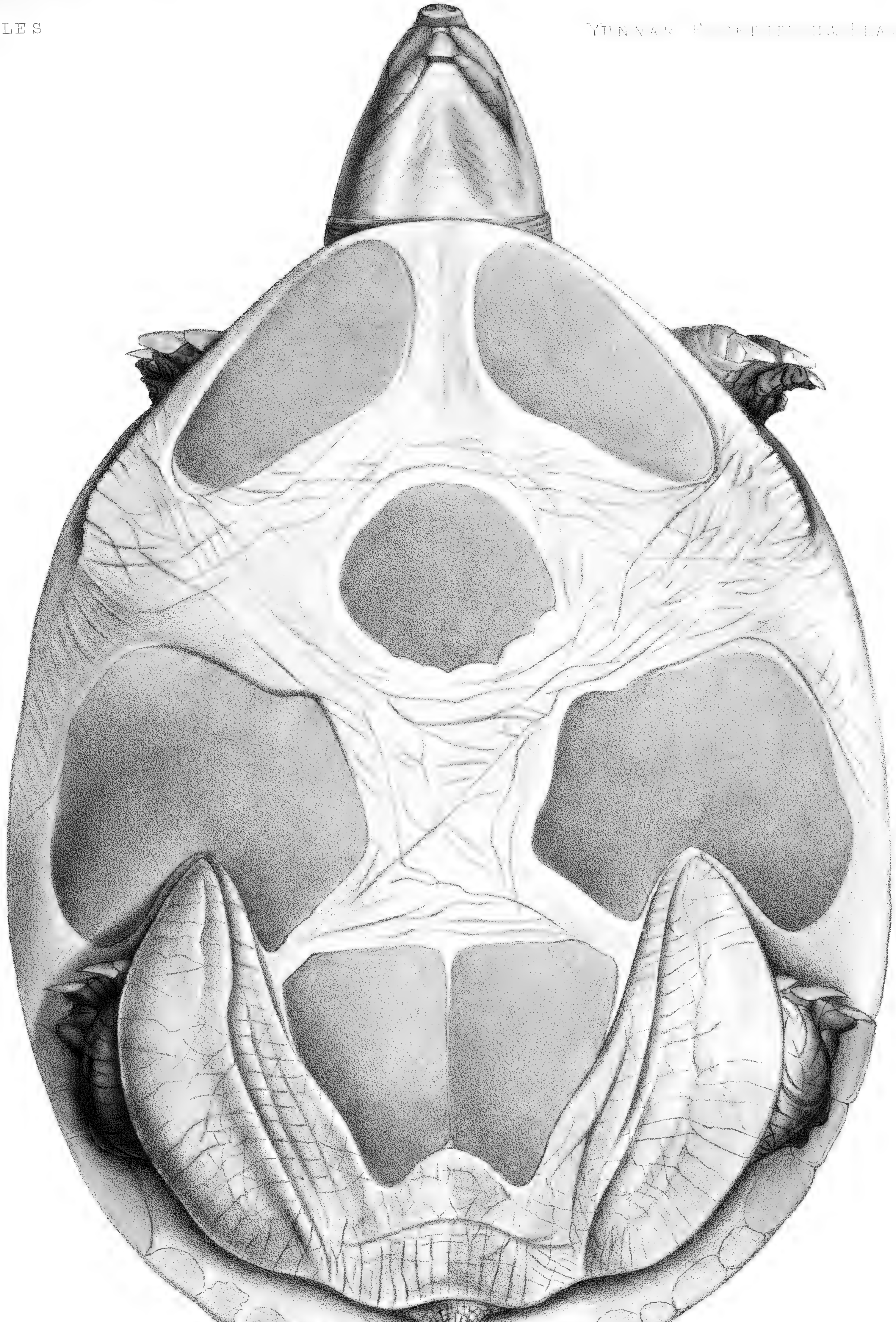
Banks & Co. Edinr.

TRIONYX PEGUENSIS, GRAY. (ADULT)



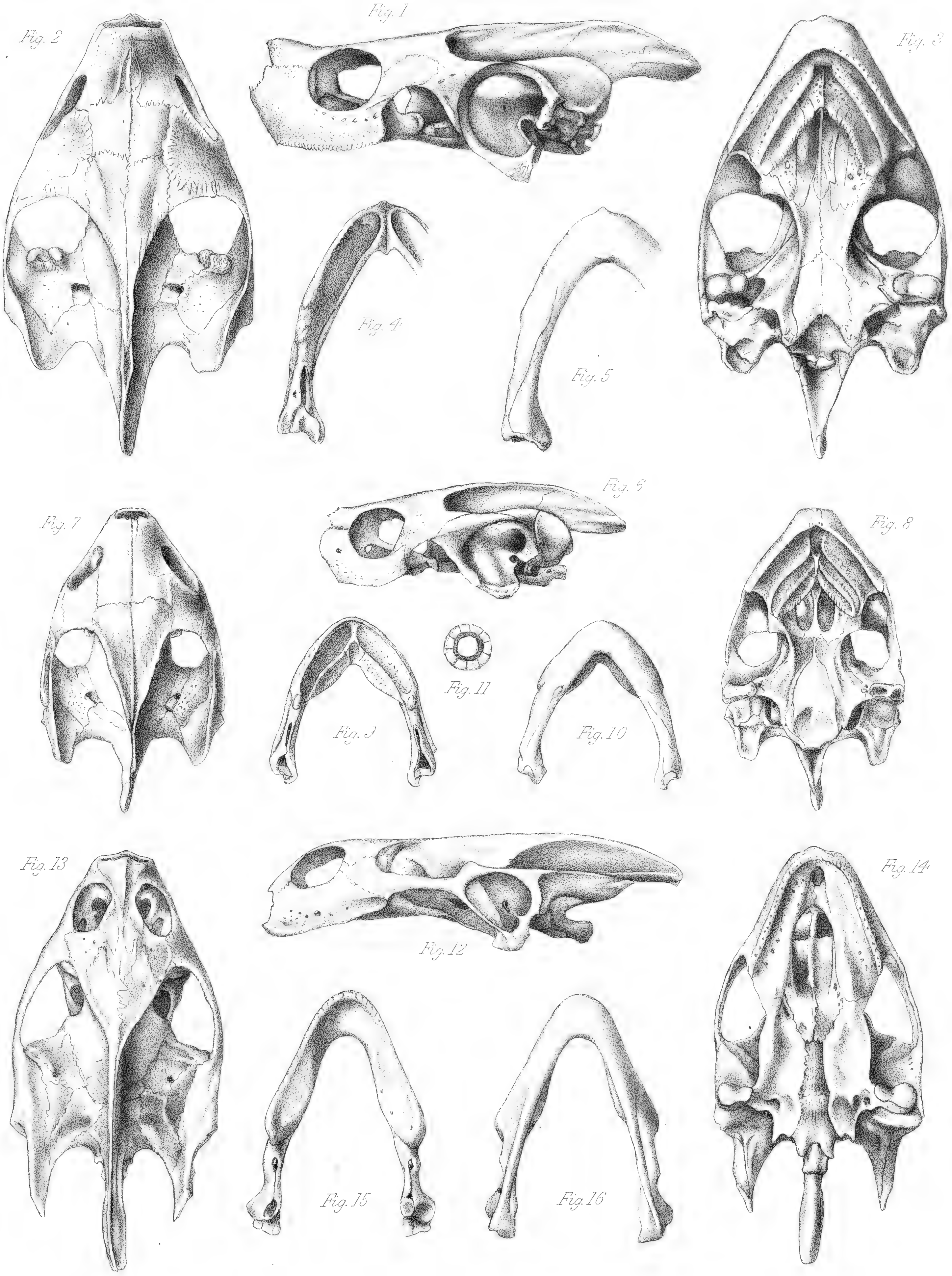
C. Berjeau Lith.

EMYDA SCUTATA, PETERS, ♀.



Berjeau, Lith. Banks & Co., Edinr.

EMYDA SCUTATA, PETERS. ♀.



C. Berjeau. Lith.

SKULLS OF
BATAGUR AND EMYDA.

Banks & Co. Edin^r.

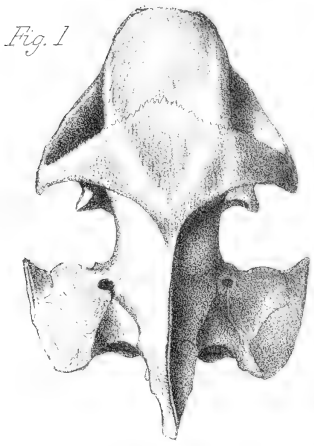


Fig. 1


Fig. 3

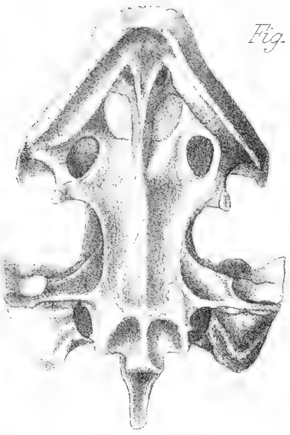


Fig. 2

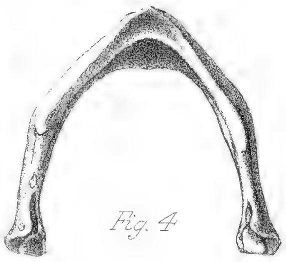


Fig. 4

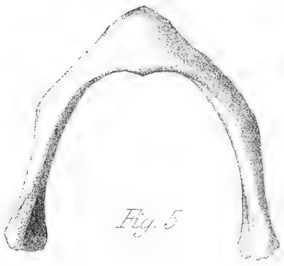
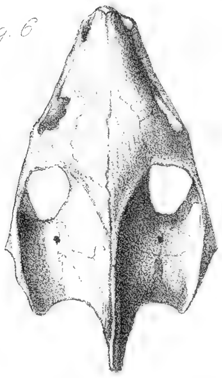


Fig. 5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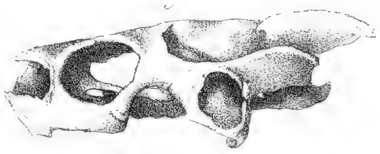
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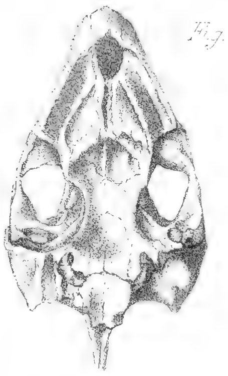
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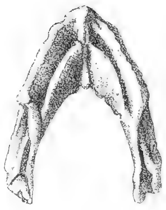
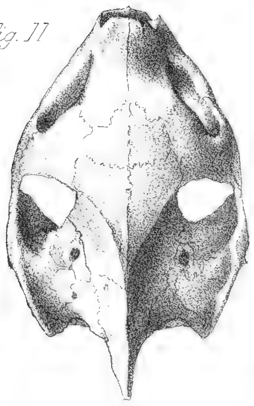


Fig. 9


Fig. 10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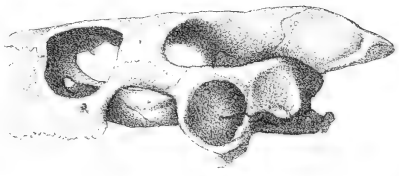
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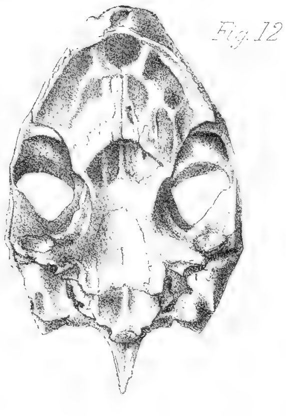
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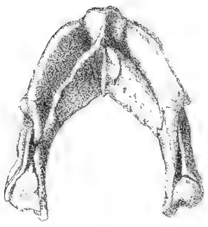
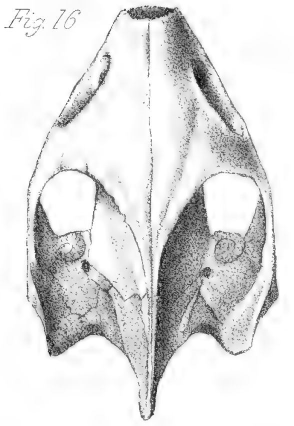


Fig. 14


Fig. 15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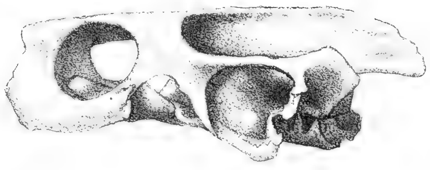


Fig. 18

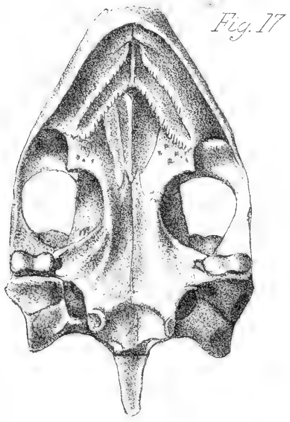


Fig. 17

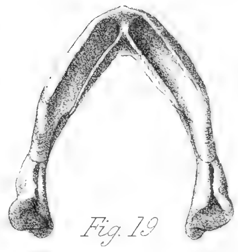


Fig. 19

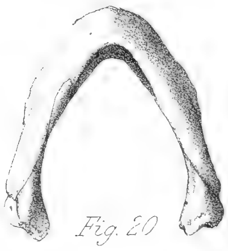


Fig. 20

C. Berjeau, Lith,

SKULLS
GEOEMYDA, EMYS AND BATAGUR

Banks & Co., Edinr.

Fig. 3.

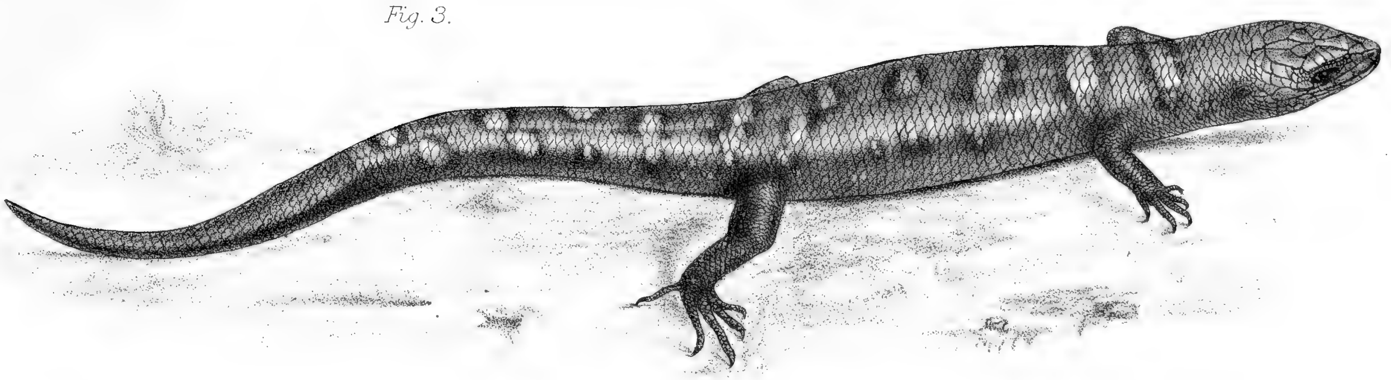


Fig. 1.

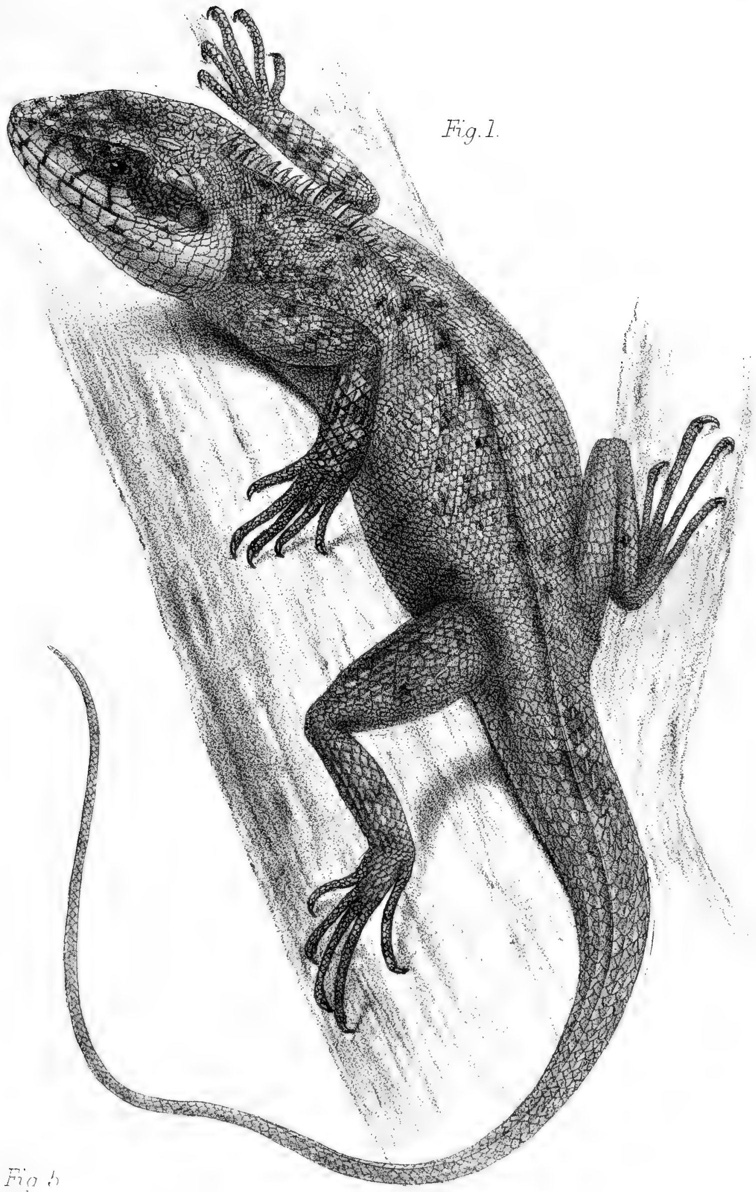
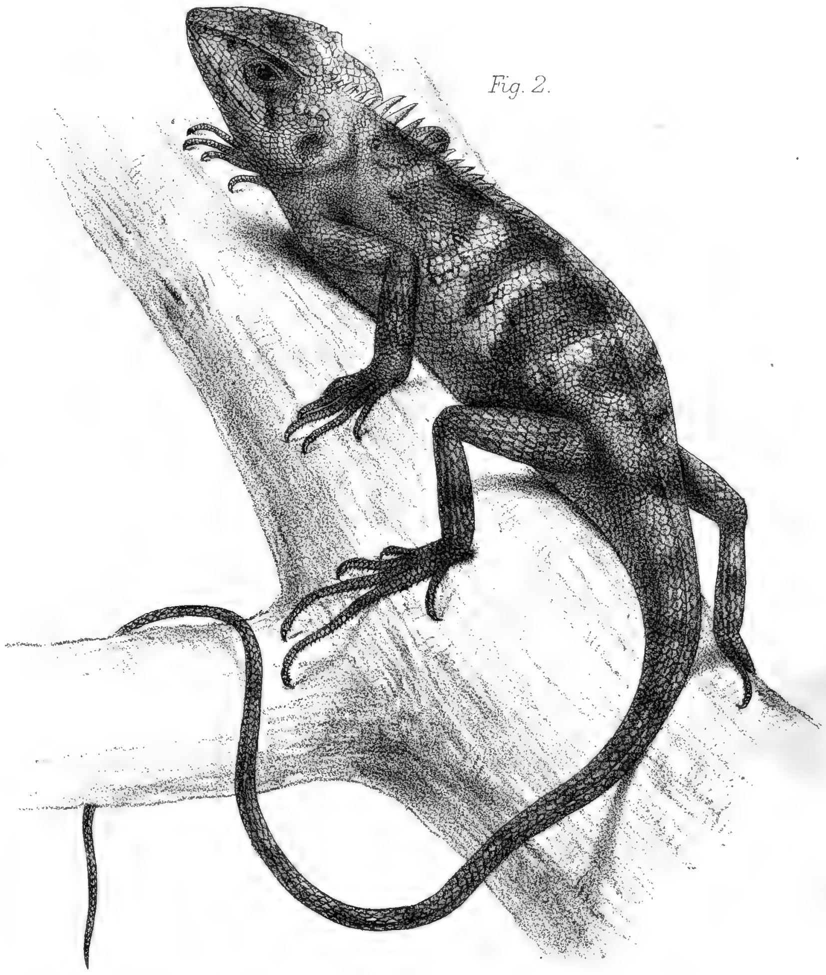


Fig. 2.



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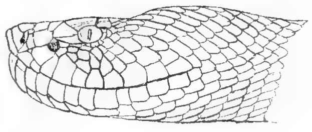
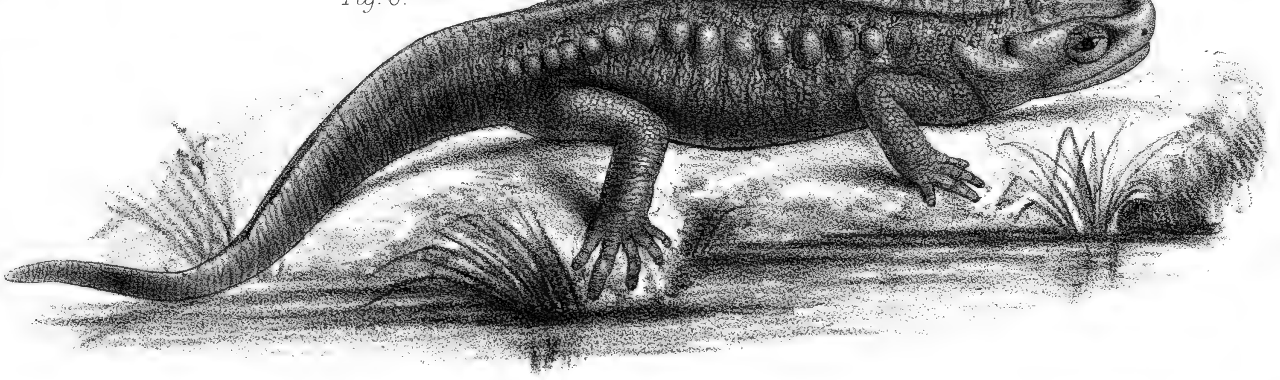


Fig. 4.

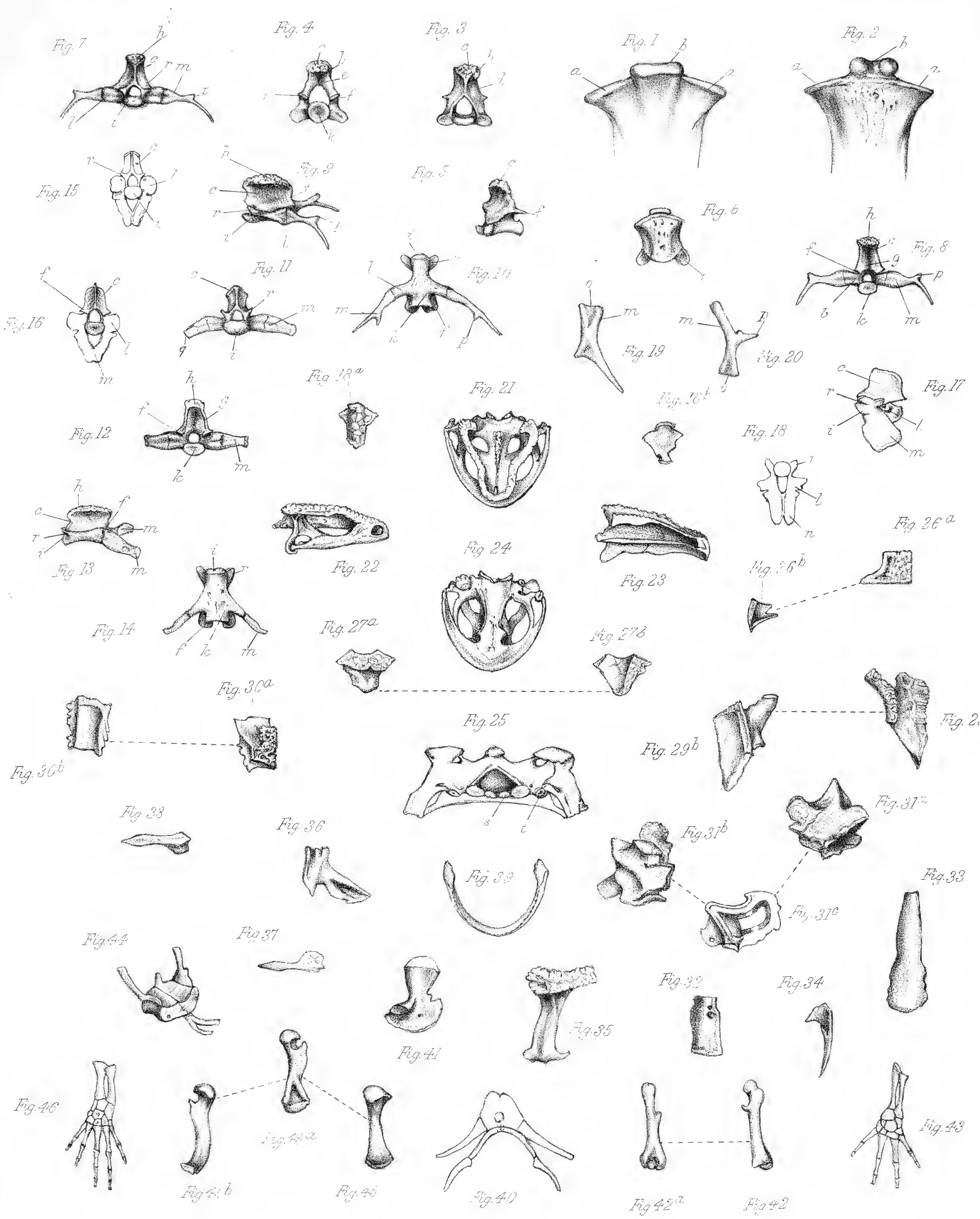
Fig. 6.



R. Mintern lith.

Mintern Bros. imp.

1, ORIOCALOTES KAKHIENENSIS, *Andr.* 2, JAPALURA YUNNANENSIS, *Andr.*
3, TROPIDOPHORUS BERDMOREI, *Blyth, Var.* 4. 5, TRIMERESURUS MONTICOLA, *Gthr. Var.*
6, TYLOTOTRITON VERRUCOSUS. *Andr.*



J. Anderson del. C. Berjeau, Lith.

Banks & Co., Edinr.

OSTEOLOGY OF TYLOTOTRITON.

Fig. 1.

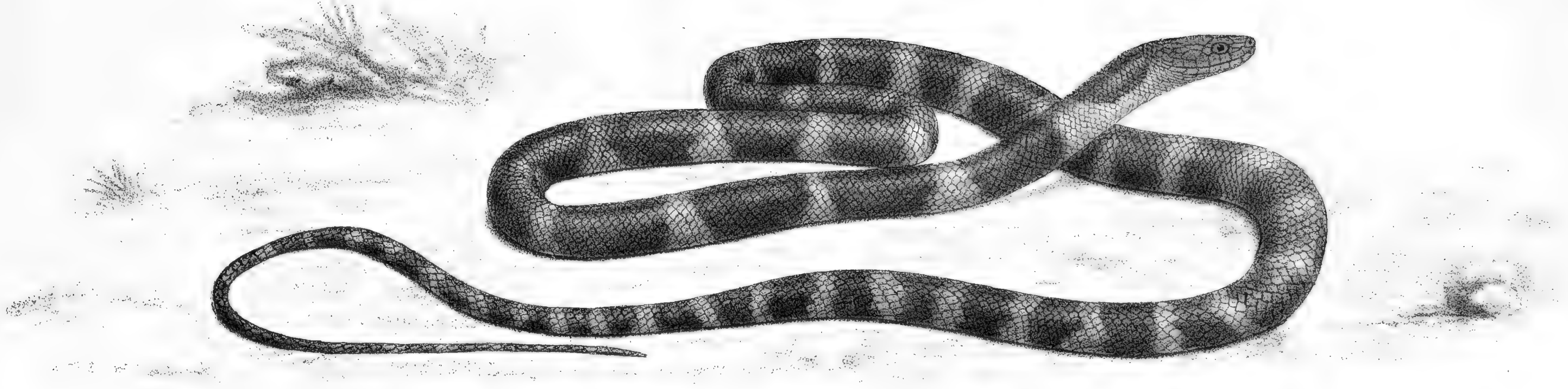
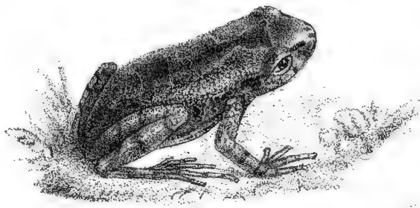


Fig. 5.



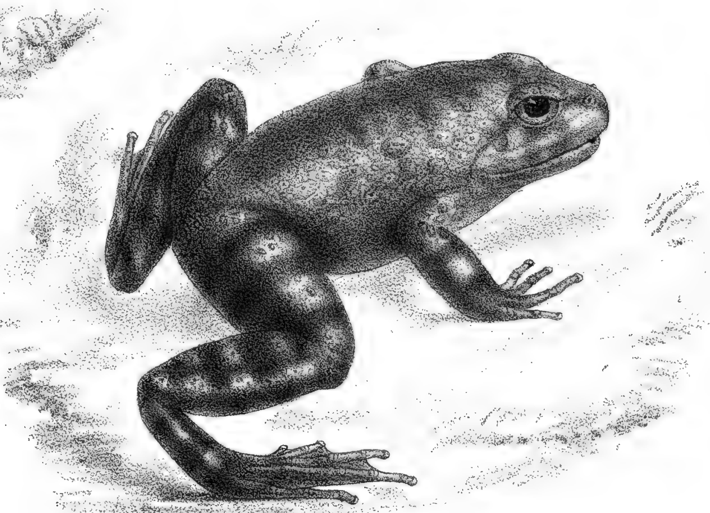


Fig. 2.

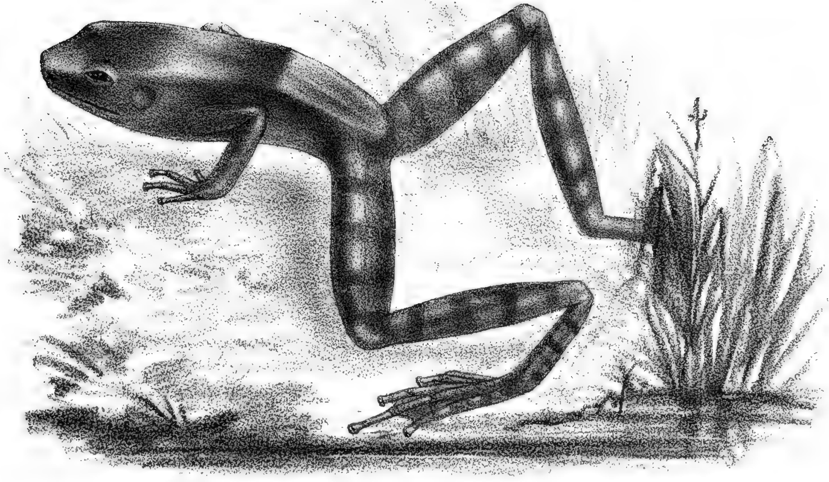


Fig. 4.

Fig. 3.

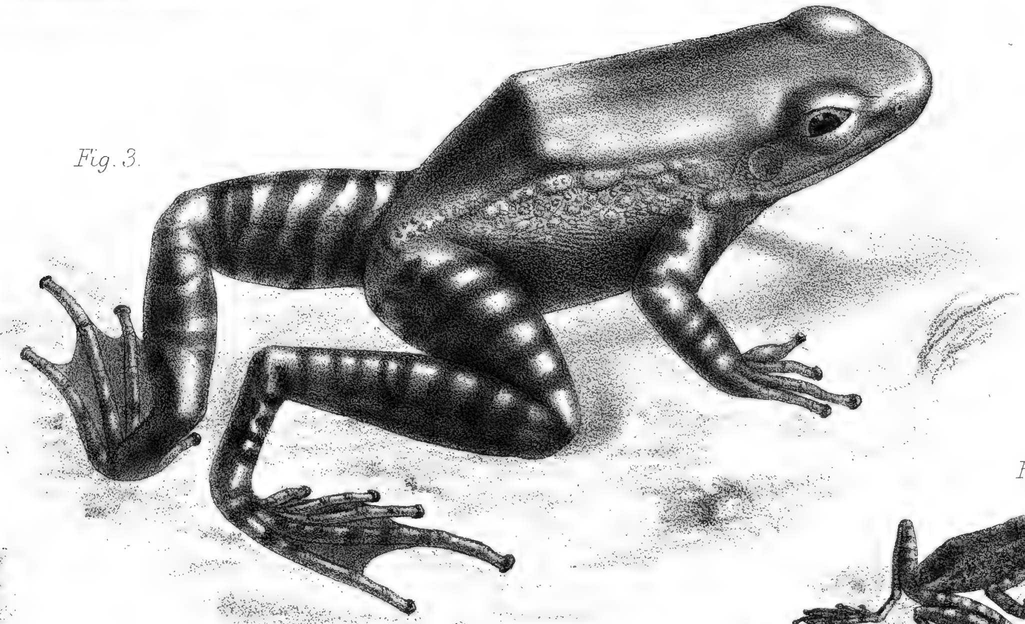
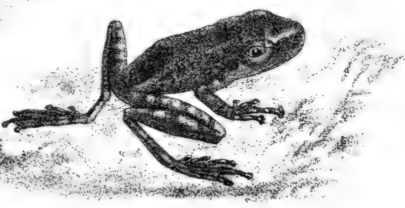


Fig. 6.

Fig. 7.



R Mintern lith. Mintern Bros. imp.

1, OPHITES FASCIATUS, *Andr.* 2, RANA YUNNANENSIS, *Andr.*
3, POLYPEDATES YUNNANENSIS, *Andr.* 4, HYLORANA MARGARIANA. *Andr.*
5, IXALUS LATERALIS, *Andr.* 6, I. KAKHIENENSIS, *Andr.* 7, I. TUBERCULATUS, *Andr.*

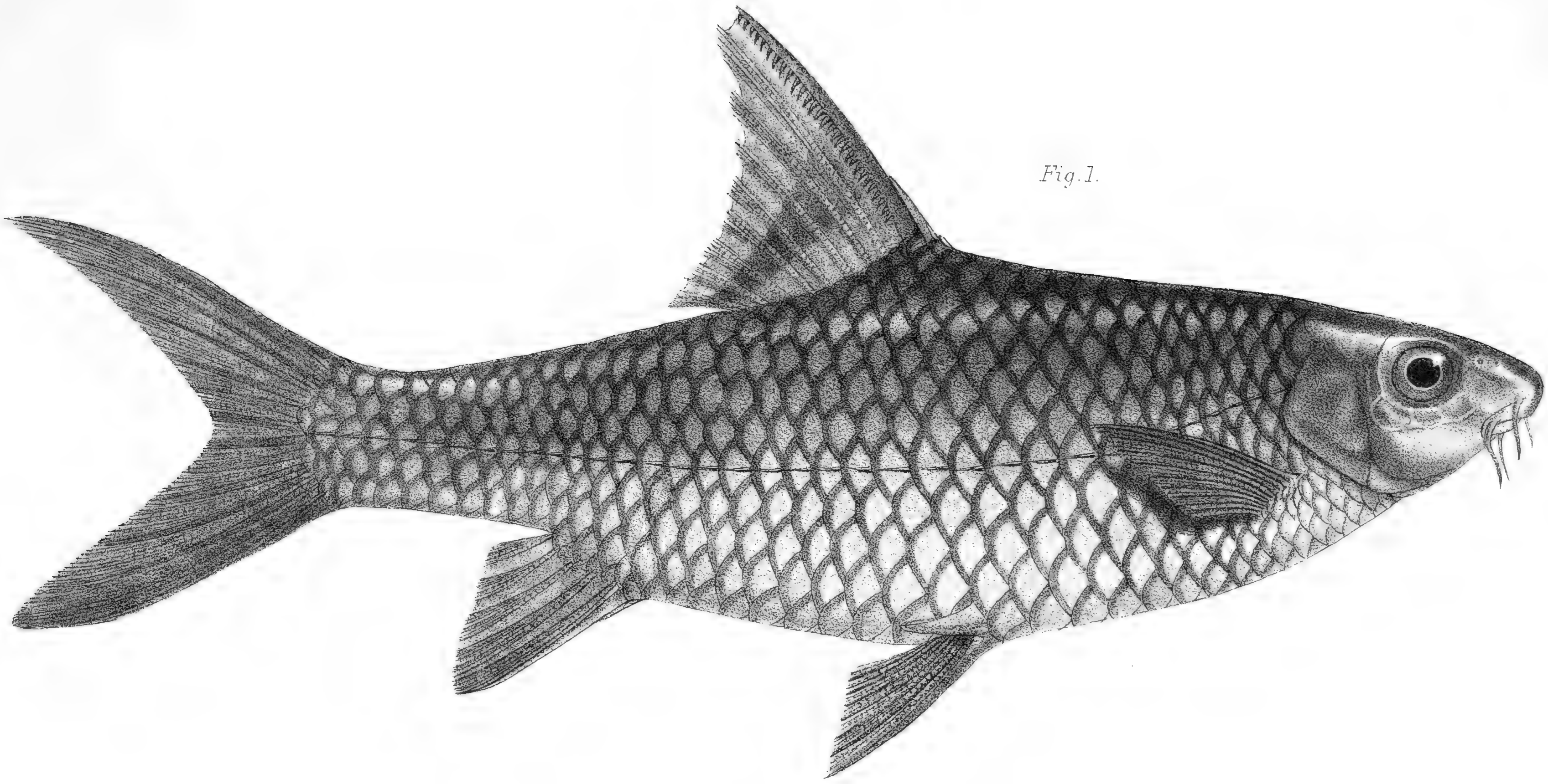


Fig. 1.

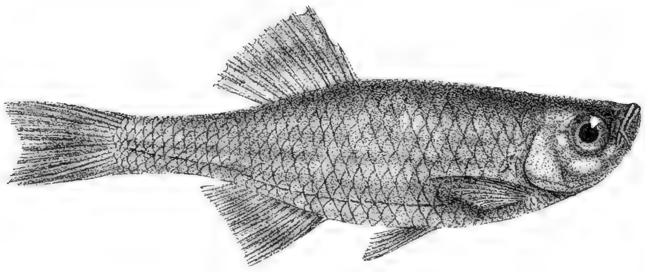
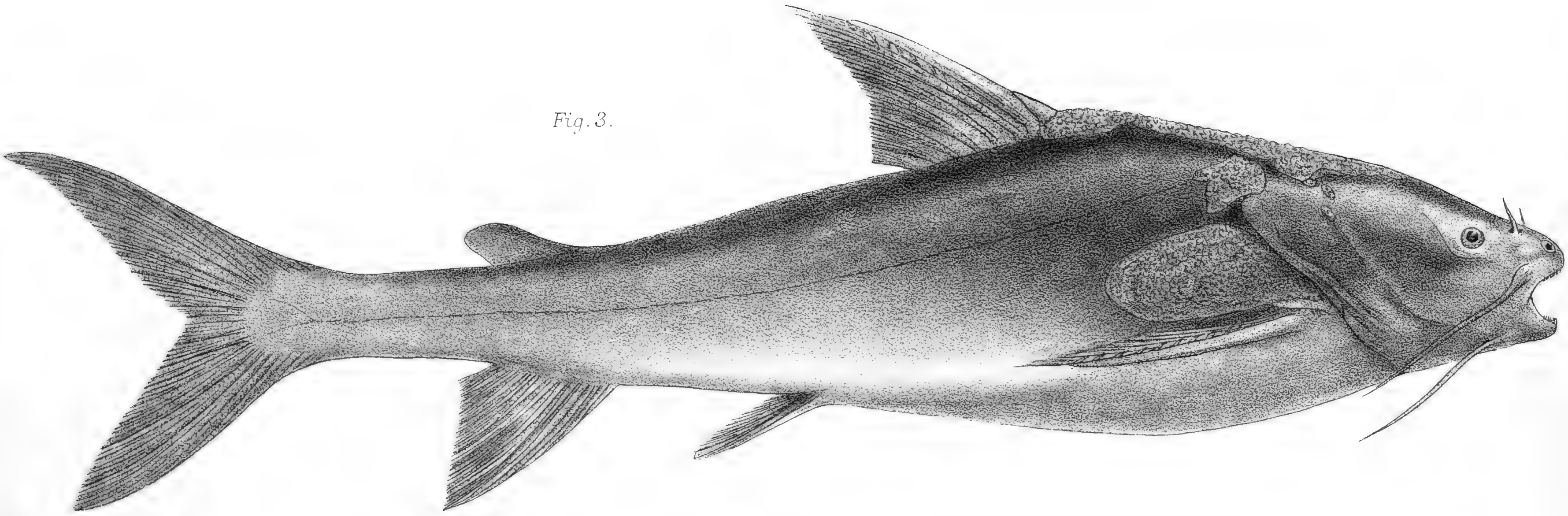


Fig. 2.

Fig. 3.



R Mintern lith.

Mintern Bros. imp.

1, BARBUS MARGARIANUS, *Andr.*
2, DANIO KAKHIENENSIS, *Andr.* 3, RITA SACERDOTUM, *Andr.*

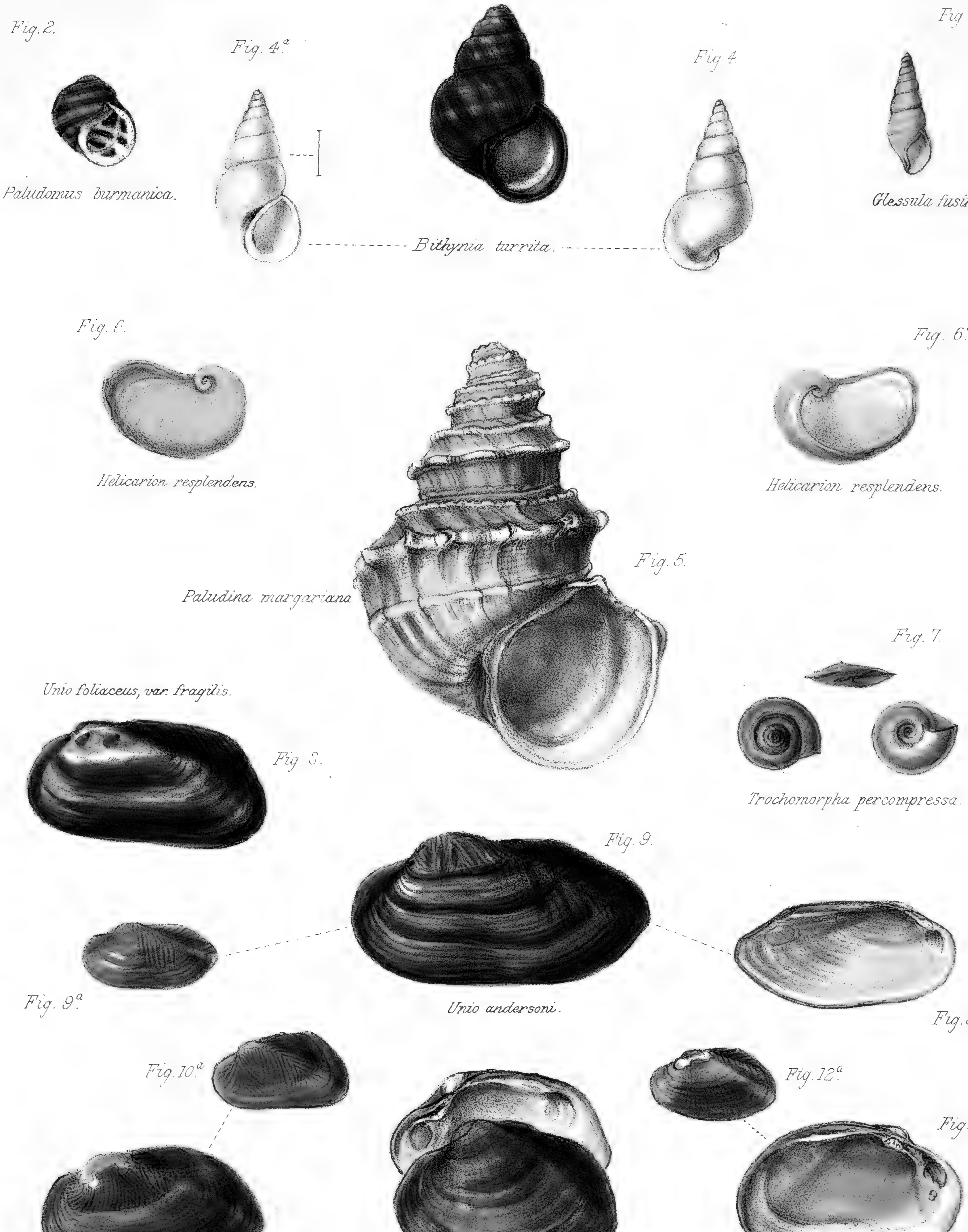


Fig. 1. *Paludina heliciformis.*

Fig. 2. *Paludomus burmanica.*

Fig. 4ª. Fig. 4. *Bithynia turrita.*

Fig. 3. *Glessula fusiformis.*

Fig. 6. *Helicarion resplendens.*

Fig. 6ª. *Helicarion resplendens.*

Fig. 5. *Paludina margariana*

Fig. 7. *Trochomorpha percompressa.*

Fig. 8. *Unio foliaceus, var. fragilis.*

Fig. 9. Fig. 9ª. Fig. 9ᵇ. *Unio andersoni.*

Fig. 10ª. Fig. 10. *Unio bonneaudi. var.*

Fig. 11. *Unio feddeni.*

Fig. 12ª. Fig. 12. *U. bonneaudi. var.*

UNIVALVE & BIVALVE MOLLUSCA.

G.B.Sowerby lith.

M & N Hanhart imp.

Fig. 6 *Syntomis Fytchei*

Fig. 1

Æmonu lena

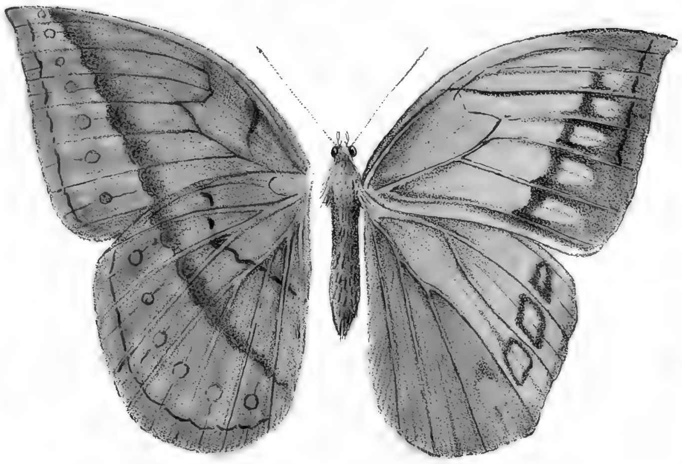


Fig. 10 *Apis laboriosa*

Fig. 7 *Syntomis Grotei*

Fig. 8 *Syntomis Sladeni*

Fig. 5

Syntomis Atkinsoni

Fig. 3 *Zophoessa Andersoni*

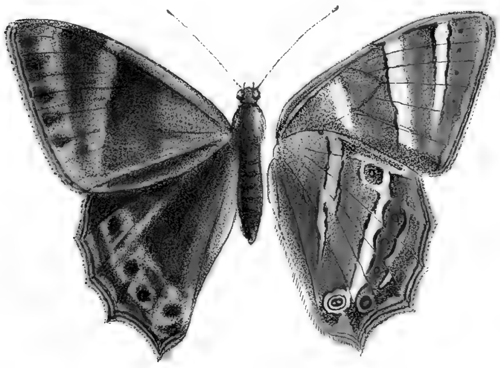


Fig. 2 *Plesioneura liliana*

Fig. 9

Vespa bellona

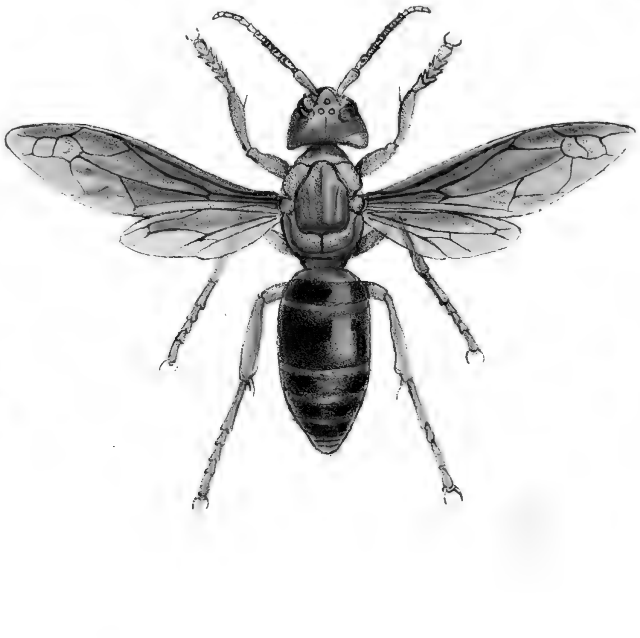
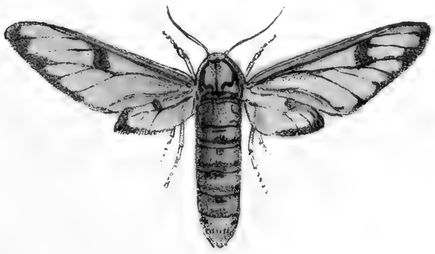


Fig. 11 *Bombus impetuosus*

Fig. 4 *Syntomis Andersoni*



C. Berjeau, Lith.

Banks & Co., Edinr.

LEPIDOPTERA & HYMENOPTERA.

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